

Package ‘DataVisualizations’

August 20, 2019

Type Package

Title Visualizations of High-Dimensional Data

Version 1.1.8

Date 2019-08-20

Maintainer Michael Thrun <m.thrun@gmx.net>

Description Gives access to data visualisation methods that are relevant from the data scientist's point of view. The flagship idea of 'DataVisualizations' is the mirrored density plot (MD-plot) for either classified or non-classified multivariate data presented in Thrun et al. (2019) <arXiv:1908.06081>. The MD-plot outperforms the box-and-whisker diagram (box plot) and bean plot. Furthermore, a collection of various visualization methods for univariate data is provided. In the case of exploratory data analysis, 'DataVisualizations' makes it possible to inspect the distribution of each feature of a dataset visually through a combination of four methods. One of these methods is the Pareto density estimation (PDE) of the probability density function (pdf). Additionally, visualizations of the distribution of distances using PDE, the scatter-density plot using PDE for two variables as well as the Shepard density plot and the Bland-Altman plot are presented here. Pertaining to classified high-dimensional data, a number of visualizations are described, such as f.ex. the heat map and silhouette plot. A political map of the world or Germany can be visualized with the additional information defined by a classification of countries or regions. By extending the political map further, an uncomplicated function for a Choropleth map can be used which is useful for measurements across a geographic area. For categorical features, the Pie charts, slope charts and fan plots, improved by the ABC analysis, become usable. More detailed explanations are found in the book by Thrun, M.C.: "Projection-Based Clustering through Self-Organization and Swarm Intelligence" (2018) <doi:10.1007/978-3-658-20540-9>.

License GPL-3

Imports Rcpp (>= 0.12.12), ggplot2, sp

Suggests pracma, plyr, akima, ggmap, reshape2, plotrix, rworldmap, rgl, ABCanalysis, choroplethr, gplots, dplyr, R6, parallelDist, knitr (>= 1.12), rmarkdown (>= 0.9), vioplot, ggExtra, plotly, htmlwidgets, diptest, moments, signal, DatabionicSwarm, rowr, AdaptGauss

LinkingTo Rcpp, RcppArmadillo

Depends R (>= 3.5)

SystemRequirements C++11

LazyLoad yes

LazyData TRUE

URL <http://www.deepbionics.org>

VignetteBuilder knitr

BugReports <https://github.com/Mthrun/DataVisualizations/issues>

NeedsCompilation yes

Author Michael Thrun [aut, cre, cph] (<<https://orcid.org/0000-0001-9542-5543>>),
 Felix Pape [aut, rev],
 Onno Hansen-Goos [ctr, ctb],
 Alfred Ultsch [dct, ctb]

Repository CRAN

Date/Publication 2019-08-20 11:40:05 UTC

R topics documented:

DataVisualizations-package	3
ABCbarplot	6
categoricalVariable	8
Choroplethmap	8
ChoroplethPostalCodesAndAGS_Germany	11
ClassBoxplot	12
ClassMDplot	14
ClassPDEplot	16
ClassPDEplotMaxLikeli	17
Classplot	18
Crosstable	20
DefaultColorSequence	21
DualaxisClassplot	22
DualaxisLinechart	23
Fanplot	24
FundamentalData_Q1_2018	25
GoogleMapsCoordinates	27
Heatmap	28
HeatmapColors	29
inPSphere2D	30
InspectBoxplots	30
InspectDistances	31
InspectScatterplots	32
InspectStandardization	33
InspectVariable	34
ITS	35
Lsun3D	35

MAplot	36
MDplot	37
MDplot4multiplevectors	40
MTY	43
OptimalNoBinsV2	44
ParetoDensityEstimationV2	45
ParetoRadiusV2	46
PDEplot	47
PDEscatter	49
Piechart	51
Pixelmatrix	52
Plot3D	53
PlotMissingvalues	55
PlotProductratio	56
PmatrixColormap	57
QQplot	57
Sheparddiagram	58
ShepardPDEscatter	59
SignedLog	60
Silhouetteplot	61
Slopechart	63
StatPDEdensity	64
stat_pde_density	65
Worldmap	67
world_country_polygons	68
zplot	155
Index	156

DataVisualizations-package

Visualizations of High-Dimensional Data

Description

Gives access to data visualisation methods that are relevant from the data scientist's point of view. The flagship idea of 'DataVisualizations' is the mirrored density plot (MD-plot) for either classified or non-classified multivariate data presented in Thrun et al. (2019) <arXiv:1908.06081>. The MD-plot outperforms the box-and-whisker diagram (box plot) and bean plot. Furthermore, a collection of various visualization methods for univariate data is provided. In the case of exploratory data analysis, 'DataVisualizations' makes it possible to inspect the distribution of each feature of a dataset visually through a combination of four methods. One of these methods is the Pareto density estimation (PDE) of the probability density function (pdf). Additionally, visualizations of the distribution of distances using PDE, the scatter-density plot using PDE for two variables as well as the Shepard density plot and the Bland-Altman plot are presented here. Pertaining to classified high-dimensional data, a number of visualizations are described, such as f.ex. the heat map and silhouette plot. A political map of the world or Germany can be visualized with the additional information defined by a classification of countries or regions. By extending the political map further,

an uncomplicated function for a Choropleth map can be used which is useful for measurements across a geographic area. For categorical features, the Pie charts, slope charts and fan plots, improved by the ABC analysis, become usable. More detailed explanations are found in the book by Thrun, M.C.: "Projection-Based Clustering through Self-Organization and Swarm Intelligence" (2018) <doi:10.1007/978-3-658-20540-9>.

Details

For a brief introduction to **DataVisualizations** please see the vignette [A Quick Tour in Data Visualizations](#).

Please see <http://www.deepbionics.org/>. Depending on the context please cite either [Thrun, 2018] regarding visualizations in the context of clustering or [Thrun/Ultsch, 2018] for other visualizations.

For the Mirrored Density Plot (MD plot) please cite [Thrun et al., 2019].

The MD plot is also available in Python <https://pypi.org/project/md-plot/>

Index of help topics:

ABCbarplot	Barplot with Sorted Data Colored by ABCAnalysis
ChoroplethPostalCodesAndAGS_Germany	Postal Codes and AGS of Germany for a Choropleth Map
Choroplethmap	Plot the Choropleth Map
ClassBoxplot	Creates Boxplot plot for all classes
ClassMDplot	Class MD-plot for Data w.r.t. all classes
ClassPDEplot	PDE Plot for all classes
ClassPDEplotMaxLikeli	Create PDE plot for all classes with maximum likelihood
Classplot	Classplot
Crosstable	Crosstable plot
DataVisualizations-package	Visualizations of High-Dimensional Data
DefaultColorSequence	Default color sequence for plots
DualaxisClassplot	Dualaxis Classplot
DualaxisLinechart	DualaxisLinechart
Fanplot	The fan plot
FundamentalData_Q1_2018	Fundamental Data of the 1st Quarter in 2018
GoogleMapsCoordinates	Google Maps with marked coordinates
Heatmap	Heatmap for Clustering
HeatmapColors	Default color sequence for plots
ITS	Income Tax Share
InspectBoxplots	Enables to Insptecd the Boxplots for Multiple variables
InspectDistances	Inspection of Distance-Distribution
InspectScatterplots	Pairwise scatterplots and optimal histograms
InspectStandardization	QQplot of Data versus Normalized Data
InspectVariable	Visualization of Distribution of one variable

Lsun3D	Lsun3D inspired by FCPS
MAplot	Minus versus Add plot
MDplot	Mirrored Density plot (MD-plot)
MDplot4multiplevectors	Mirrored Density plot (MD-plot)for Multiple Vectors
MTY	Municipal Income Tax Yield
OptimalNoBinsV2	Optimal Number Of Bins
PDEplot	PDE plot
PDEscatter	Scatter Density Plot
ParetoDensityEstimationV2	Pareto Density EstimationV2
ParetoRadiusV2	ParetoRadius for distributions
Piechart	The pie chart
Pixelmatrix	Plot of a Pixel Matrix
Plot3D	3D plot of points
PlotMissingvalues	Plot of the Amount Of Missing Values
PlotProductratio	Product-Ratio Plot
PmatrixColormap	P-Matrix colors
QQplot	QQplot with a Linear Fit
ShepardPDEscatter	Shepard PDE scatter
Sheparddiagram	Draws a Shepard Diagram
SignedLog	Signed Log
Silhouetteplot	Silhouette plot of classified data.
Slopechart	Slope Chart
StatPDEdensity	Pareto Density Estimation
Worldmap	plots a world map by country codes
categoricalVariable	A categorical Feature.
inPSphere2D	2D data points in Pareto Sphere
stat_pde_density	Calculate Pareto density estimation for ggplot2 plots
world_country_polygons	world_country_polygons
zplot	Plotting for 3 dimensional data

Author(s)

Michael Thrun, Felix Pape, Onno Hansen-Goos, Alfred Ultsch

Maintainer: Michael Thrun <m.thrun@gmx.net>

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, Heidelberg, ISBN: 978-3-658-20539-3, <https://doi.org/10.1007/978-3-658-20540-9>, 2018.

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech,, S. (eds.), Proc. 12th Professor Aleksander

Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

[Thrun et al., 2019] Thrun, M. C., Gehlert, Tino, & Ultsch, A. : Analyzing the Fine Structure of Distributions, arXiv:1908.06081, 2019.

Examples

```

data("Lsun3D")
Data=Lsun3D$Data

Pixelmatrix(Data)

InspectDistances(as.matrix(dist(Data)))

data("ITS")
data("MTY")
Inds=which(ITS<900&MTY<8000)
plot(ITS[Inds],MTY[Inds],main='Bimodality is not visible in normal scatter plot')

PDEscatter(ITS[Inds],MTY[Inds],xlab = 'ITS in EUR',
ylab = 'MTY in EUR' ,main='Pareto Density Estimation indicates Bimodality' )

MAlist=MAplot(ITS,MTY)

data("Lsun3D")
Cls=Lsun3D$Cls
Data=Lsun3D$Data
#clear cluster structure
plot(Data[,1:2],col=Cls)
#However, the silhouette plot does not indicate a very good clustering in cluster 1 and 2

Silhouetteplot(Data,Cls = Cls)

Heatmap(as.matrix(dist(Data)),Cls = Cls)

```

ABCbarplot

Barplot with Sorted Data Colored by ABCanalysis

Description

This plot can be read like a scree plot for PCA. It allowed to select the most important values visually.

Usage

```
ABCbarplot(Data,  
  
Colors=DataVisualizations::DefaultColorSequence[1:3],  
  
main,xlab="Fraction of Data",ylab="Value")
```

Arguments

Data	[1:n] vector of Data, e.g. eigenvalues of PCA
Colors	three colors for A, B and C
main	title of plot
xlab	xlabel
ylab	ylabel

Details

ABC analysis is explained in **ABCanalysis**. The visualization is based on **ggplot2**.

Value

List V of	
ABCanalysis	output of ABCanalysis
ggobject	object of ggplot2 plotted
DF	Data frame if another plot should be done manually

Author(s)

Michael Thrun

References

Ultsch. A ., Lotsch J.: Computed ABC Analysis for Rational Selection of Most Informative Variables in Multivariate Data, PloS one, Vol. 10(6), pp. e0129767. doi 10.1371/journal.pone.0129767, 2015.

See Also

[ABCanalysis](#)

Examples

```
data('FundamentalData_Q1_2018')  
Data=as.matrix(FundamentalData_Q1_2018$Data)  
Data[!is.finite(Data)]=0  
results=prcomp(Data)
```

```
main="Scree plot with Class A of the Most-Important Eigenvalues"
ABCbarplot(results$sdev,ylab='Eigenvalues',main=main)$ggobject
```

categoricalVariable *A categorical Feature.*

Description

Character vector of length 391029 with five different labels.

Usage

```
data("categoricalVariable")
```

Examples

```
data(categoricalVariable)
unique(categoricalVariable)
```

Choroplethmap *Plot the Choropleth Map*

Description

A thematic map with areas colored in proportion to the measurement of the statistical variable being displayed on the map. A political map generated by this function was used in the conference talk of the publication [Thrun/Ultsch, 2018].

Usage

```
Choroplethmap(Counts, PostalCodes, NumberOfBins = 0,
  Breaks4Intervals, percentiles = c(0.5, 0.95),
  digits = 0, PostalCodesShapes, PlotIt = TRUE,
  DiscreteColors, HighColorContinuous = "red",
  LowColorContinuous = "deepskyblue1", NAcolor = "grey",
  ReferenceMap = FALSE, main = "Political Map of Germany",
  legend = "Range of values", Silent = TRUE)
```


Arguments

Counts	vector [1:m], statistical variable being displayed
PostalCodes	vector[1:n], currently german postal codes (zip codes), if PostalCodesShapes is not changed manually, does not need to be unique
NumberOfBins	Default: 1; 1 or below continuously changes the color as defined by the package choroplethr. A Number between 2 and 9 sets equally sized bins. Higher numbers are not allowed
Breaks4Intervals	If NumberOfBins>1 you can set here the intervals of the bins manually
percentiles	If NumberOfBins>1 and Breaks4Intervals not set, then the percentiles of min and max bin can be set here. See also quantile.
digits	number of digits for round
PostalCodesShapes	Specially prepared shape file with postal codes and geographic boundaries. If you set this object, then you can use non german zip codes. You can see the required structure in map.df, github trulia choroplethr blob master r chloropleth. The German PostalCodesShapes can be downloaded from http://www.deepbionics.org/Projects/DataVisualizations.html .
PlotIt	Either Plot the map directly or change the object manually before plotting it
DiscreteColors	Set the discrete colors manually if NumberOfBins>1, else it is ignored
HighColorContinuous	if NumberOfBins<=1: color of highest continuous value, else it is ignored
LowColorContinuous	if NumberOfBins<=1: color of lowest continuous value, else it is ignored
NAcolor	Color of NA values in the map (postal codes without any counts)
ReferenceMap	TRUE: With Google map, FALSE: without Google map
main	title of plot
legend	title of legend
Silent	TRUE: disable warnings of choroplethr package FALSE: enable warnings of choroplethr package

Details

The choroplethr package is not documented well. This wrapper enables to visualize an map much more easy in the case of german zip codes. Other postal codes are in principle usable.

Value

List of

chorR6obj	An R6 object of the package choroplethr
DataFrame	Transformed PostalCodes and Counts in a way that they can be used in the package choroplethr.

Note

You could read <https://www.r-bloggers.com/case-study-mapping-german-zip-codes-in-r/>, if you want to change the map (PostalCodesShapes shape object).

Author(s)

Michael Thrun

References

[Thrun/Ultsch, 2018] Thrun, M. C. & Ultsch A. : Effects of the payout system of income taxes to municipalities in Germany, 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, Foundation of the Cracow University of Economics, Zakopane, Poland, accepted, 2018.

See Also

Google choroplethr package.

Examples are provided in <http://www.deepbionics.org/Projects/DataVisualizations.html>

Examples

```
#If you download the package from CRAN

# 1. Step: Downlaod the shape file from the website
# www.deepbionics.org/Projects/DataVisualizations.html
# 2. Step: load it from the local path od the downloaded file with
load(file='GermanPostalCodesShapes.rda')

# If you download the package from GitHub, you can omit the two steps above.
# Then, do not use the 'PostalCodesShapes' input parameter

#Many postal codes are required to see a structure
#Exemplary two postal codes in the upper left corner of the map

out=Choroplethmap(c(4,8,5,4),
c('49838', '26817', '49838', '26817'),
NumberOfBins=2,PlotIt=FALSE,
PostalCodesShapes=GermanPostalCodesShapes)

out$chorR6obj$render()

#bins are only presented in the map if the have values within
out=Choroplethmap(c(4,8,5,4),c('49838', '26817',
```

```

'49838', '26817'),NumberOfBins=5,

Breaks4Intervals=c(1,2,3,5,10),PlotIt=FALSE,
PostalCodesShapes=GermanPostalCodesShapes)

out$chorR6obj$render()

# Result of [Thrun/Ultsch, 2018]
# Slightly misuse the function for visualizing a political map
# resulting out of a clustering

data('ChoroplethPostalCodesAndAGS_Germany')
res=Choroplethmap(as.numeric(ChoroplethPostalCodesAndAGS_Germany$Cls)+1,

ChoroplethPostalCodesAndAGS_Germany$PLZ,NumberOfBins = 2,

Breaks4Intervals = c(0,1,2,3,4,5,6),digits = 1,ReferenceMap = F,

DiscreteColors = c('white','green','blue','red','magenta'),

main = 'Classification of German Postal Codes based on Income Tax Share and Yield',

legend = 'ITS vs MTY Classification in 2010',NAcolor = 'black',PlotIt=FALSE,
PostalCodesShapes=GermanPostalCodesShapes)

#takes time to process
res$chorR6obj$render()

```

ChoroplethPostalCodesAndAGS_Germany

Postal Codes and AGS of Germany for a Choropleth Map

Description

Zip Codes and Community Identification Number of Germany which can be used in a Choropleth Map.

Usage

```
data("ChoroplethPostalCodesAndAGS_Germany")
```

Format

A data frame with 8702 observations on the following 4 variables.

PLZ German postal codes/zip codes

CLS Clustering aggregated of germany postal codes by MTY and ITS features

AGS It is the 'Amtlicher Gemeindeschlüssel' (Community Identification Number) of German municipalities

Names Names of municipalities

Details

CLS are the the labels of a MTS versus ITS Bayesian classification showing two main groups of low quota ('1') and high quota ('2') municipalities. Additionally, outliers are manually classified into two separated groups called sponsors ('3') and promoted ('4'). In the Bayesian Classification non classified data have the label '0'. If a 'AGS' code of a 'PLZ' was unclear than the label is 'NaN'.

Class	0	low quota	high quota	sponsors	promoted	non classified	unclear mapping
Labels	0	1	2	3	4	5	NaN
CountPerClass	31	1325	7239	10	95	5	2

Source

Generated for [Thrun/Ultsch, 2018] using the approach of [Ultsch/Behnisch, 2017].

References

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech,, S. (eds.), Proc. 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

[Ultsch/Behnisch, 2017] Ultsch, A., Behnisch, M.: Effects of the payout system of income taxes to municipalities in Germany, Applied Geography, Vol. 81, pp. 21-31, 2017.

Examples

```
data(ChoroplethPostalCodesAndAGS_Germany)
str(ChoroplethPostalCodesAndAGS_Germany)
```

ClassBoxplot

Creates Boxplot plot for all classes

Description

Boxplot the data for all classes

Usage

```
ClassBoxplot(Data, Cls, ColorSequence = DataVisualizations::DefaultColorSequence,
             ClassNames = NULL, All=FALSE, PlotLegend = TRUE,
             main = 'Boxplot per Class', xlab = 'Classes', ylab = 'Range of Data')
```

Arguments

Data	Vector of the data to be plotted
Cls	Vector of class identifiers.
ColorSequence	Optional: The sequence of colors used, Default: DefaultColorSequence()
ClassNames	Optional: The names of the classes. Default: C1 - C(Number of Classes)
All	Optional: adds full data vector for comparison against classes
PlotLegend	Optional: Add a legend to plot. Default: TRUE)
main	Optional: Title of the plot. Default: "ClassBoxPlot"
xlab	Optional: Title of the x axis. Default: "Classes"
ylab	Optional: Title of the y axis. Default: "Data"

Value

A List of

ClassData	The DataFrame used to plot
ggobject	The ggplot2 plot object

in mode invisible

Author(s)

Michael Thrun, Felix Pape

Examples

```
data(ITS)
model=AdaptGauss::AdaptGauss(ITS)
Classification=AdaptGauss::ClassifyByDecisionBoundaries(ITS,
DecisionBoundaries = AdaptGauss::BayesDecisionBoundaries(model$Means,model$SDs,model$Weights))
DataVisualizations::ClassBoxplot(ITS,Classification)$ggobject
```

 ClassMDplot

Class MD-plot for Data w.r.t. all classes

Description

Creates PDE optimized Violin plot for all classes

Usage

```
ClassMDplot(Data, Cls, ColorSequence,
            ClassNames = NULL,
            PlotLegend = TRUE,
            main = 'PDE Violin Plot for each Class',
            xlab = 'Classes',
            ylab = 'PDE of Data per Class', MinimalAmoutOfData=40)
```

Arguments

Data	[1:n] Vector of the data to be plotted
Cls	[1:n] Vector of class identifiers of k clusters one number is the label of one cluster
ColorSequence	Optional: [1:k] vector, The sequence of colors used, Default: DataVisualizations::DefaultColorSequence
ClassNames	Optional: [1:k] vector, The names of the classes. Default: C1 - C(Number of Classes)
PlotLegend	Optional: Add a legent to plot. Default: TRUE)
main	Optional: Title of the plot. Default: "ClassViolinPlot"
xlab	Optional: Title of the x axis. Default: "Classes"
ylab	Optional: Title of the y axis. Default: "Data"
MinimalAmoutOfData	Optional: numeric value defining a threshold. Below this threshold no density estimation is performed and a Jitter plot with a median line is drawn. Please see MDplot for details.

Details

The Cls vector is sorted from lowest to highest number. The ClassNames vector and ColorSequence vectors are matched by this ordering of Cls, i.e. the lowest number gets the first color or class name.

Value

A List of

ClassData The DataFrame used to plot

ggobject The ggplot2 plot object

in mode invisible

Author(s)

Michael Thrun, Felix Pape

References

Thrun, M. C., Gehlert, Tino, & Ultsch, A. : Analyzing the Fine Structure of Distributions, arXiv:1908.06081, 2019.

Thrun, M. C., Pape, F., & Ultsch, A. : Benchmarking Cluster Analysis Methods using PDE-Optimized Violin Plots, Proc. European Conference on Data Analysis (ECDA), accepted, Paderborn, Germany, 2018.

Thrun, M. C., Breuer, L., & Ultsch, A. : Knowledge discovery from low-frequency stream nitrate concentrations: hydrology and biology contributions, Proc. European Conference on Data Analysis (ECDA), accepted, Paderborn, Germany, 2018.

See Also

MDplot <https://pypi.org/project/md-plot/>

Examples

```
data(ITS)
model=AdaptGauss::AdaptGauss(ITS)
Classification=AdaptGauss::ClassifyByDecisionBoundaries(ITS,
DecisionBoundaries = AdaptGauss::BayesDecisionBoundaries(model$Means,model$SDs,model$Weights))
DataVisualizations::ClassMDplot(ITS,Classification)
```

ClassPDEplot *PDE Plot for all classes*

Description

PDEplot the data for all classes, weights the pdf with priors

Usage

```
ClassPDEplot(Data, Cls, ColorSequence,
             ColorSymbSequence, PlotLegend = 1,
             SameKernelsAndRadius = 0, xlim, ylim, ...)
```

Arguments

Data	The Data to be plotted
Cls	Vector of class identifiers. Can be integers or NaN's, need not be consecutive nor positive
ColorSequence	Optional: the sequence of colors used, Default: DefaultColorSequence
ColorSymbSequence	Optional: the plot symbols used (theoretisch nicht notwendig, da erst wichtig, wenn mehr als 562 Cluster)
PlotLegend	Optional: add a legend to plot (default == 1)
SameKernelsAndRadius	Optional: Use the same PDE kernels and radii for all distributions (default == 0)
xlim	Optional: range of the x axis
ylim	Optional: range of the y axis
...	further arguments passed to plot

Value

Kernels of the Pareto density estimation in mode invisible

Author(s)

Michael Thrun

Examples

```

data(ITS)
model=AdaptGauss::AdaptGauss(ITS)
Classification=AdaptGauss::ClassifyByDecisionBoundaries(ITS,

DecisionBoundaries = AdaptGauss::BayesDecisionBoundaries(model$Means,model$SDs,model$Weights))

DataVisualizations::ClassPDEplot(ITS,Classification)$gobject

```

ClassPDEplotMaxLikeli *Create PDE plot for all classes with maximum likelihood*

Description

PDEplot the data for allclasses, weight the Plot with 1 (= maximum likelihood)

Usage

```

ClassPDEplotMaxLikeli(Data, Cls, ColorSequence = DataVisualizations::DefaultColorSequence,

ClassNames, PlotLegend = TRUE, MinAnzKernels = 0,PlotNorm,

main = "Pareto Density Estimation (PDE)",

xlab = "Data", ylab = "ParetoDensity", xlim, ylim, lwd=1, ...)

```

Arguments

Data	The Data to be plotted
Cls	Vector of class identifiers. Can be integers or NaN's, need not be consecutive nor positive
ColorSequence	Optional: the sequence of colors used, Default: DefaultColorSequence
ClassNames	Optional: the names of the classes to be displayed in the legend
PlotLegend	Optional: add a legent to plot (default == 1)
MinAnzKernels	Optional: Minimum number of kernels
PlotNorm	Optional: ==1 => plot Normal distribuion on top , ==2 = plot robust normal distribution,; default: PlotNorm= 0
main	Optional: Title of the plot
xlab	Optional: title of the x axis
ylab	Optional: title of the y axis

xlim	Optional: area of the x-axis to be plotted
lwd	Optional: area of the y-axis to be plotted
ylim	numerical scalar defining the width of the lines
...	further arguments passed to plot

Value

Kernels	Kernels of the distributions
ClassParetoDensities	Pareto densities for classes
ggobject	ggplot2 plot object. This should be used to further modify the plot

Author(s)

Felix Pape

References

Aubert, A. H., Thrun, M. C., Breuer, L., & Ultsch, A. : Knowledge discovery from high-frequency stream nitrate concentrations: hydrology and biology contributions, Scientific reports, Nature, Vol. 6(31536), pp. doi 10.1038/srep31536, 2016.

Examples

```
data(ITS)
model=AdaptGauss::AdaptGauss(ITS)
Classification=AdaptGauss::ClassifyByDecisionBoundaries(ITS,
DecisionBoundaries = AdaptGauss::BayesDecisionBoundaries(model$Means,model$SDs,model$Weights))
DataVisualizations::ClassPDEplotMaxLikeli(ITS,Classification)$ggobject
```

Classplot

Classplot

Description

Allows to plot one time series or feature with a classification as a labeled scatter plot with a line. The colors are the labels defined by the classification. Usefull to see if temporal clustering has time dependent variations and for Hidden Markov Models (see Mthrun/RHmm on GitHub).

Usage

```
Classplot(X, Y, Cls,  
          xlab = "X", ylab = "Y",  
          main = "Class Plot", Colors,  
          LineColor = "grey", LineWidth = 1, LineType = NULL,  
          Showgrid = TRUE, SaveIt = FALSE)
```

Arguments

X	[1:n] numeric vector or time
Y	[1:n] numeric vector of feature
Cls	[1:n] numeric vector of k classes
xlab	Optional, string
ylab	Optional, string
main	Optional, string
Colors	Optional, string
LineColor	Optional, name of color
LineWidth	Optional, number
LineType	Optional, string
Showgrid	Optional, boolean
SaveIt	Optional, boolean

Value

plotly object

Author(s)

Michael Thrun

See Also

[DualaxisClassplot](#)

Examples

```
##ToDo
```

Crosstable

*Crosstable plot***Description**

Presents a heatmap with values and a cross table of given Data matrix of two features and a bin width or percentualized values. In this approach the bin width is fixes. A more general way to approach this is the kernel density estimation plot of [PDEscatter](#).

Usage

```
Crosstable(Data, xbins = seq(0, 100, 5), ybins = xbins,
NormalizationFactor = 1, PlotIt = TRUE, main='Cross Table',
PlotText=TRUE, TextDigits=0, TextProbs=c(0.05, 0.95))
```

Arguments

Data	[1:n,1:2] matrix of two features from which the cross table should be generated from
xbins	[1:k] start of k bins as a vector generated with seq of the first feature of data. Default setting assumes percentiled values between zero and 100.
ybins	[1:k] start of k bins as a vector generated with seq of the second feature of data. Normally the same for both features, other settings are only possible if the length k is equal.
NormalizationFactor	Optional, Data feautres can be seen as regular time series, e.g. 1 measurement for a minute, in this case it is useful to normalize the output, e.g. to hours, then NormalizationFactor=60
PlotIt	Optional, Plots the heatmap if TRUE. The first feature is on the x-axis (left to right) and the second on y-axis (bottom to top).
main	In case of for PlotIt=TRUE: title of plot, see title
PlotText	In case of for PlotIt=TRUE: Default TRUE: plots text in heatmap with the values of the crosstable
TextDigits	In case of for TextDigits=TRUE: integer indicating the number of decimal places to use in round .
TextProbs	In case of for TextDigits=TRUE: [1:2] numeric vector of two probabilities defining the thresholds for white text to grey text and grey text to black text, e.g. below the first threshold (Default 0.05) all values (5% of values) will be printed in white because the lowest values of the heatmap are blue. The second value of 0.95 works well if cross table has many zeros; uses quantile internally.

Details

The interval in each bin is closed to the left and opened to the right. The cross table can be seen as a two-dimensional histogram. The idea to add histograms to the table is taken from [Charpentier, 2014].

Value

The cross table in invisible mode which depicts the number of values (frequency) in an specific range with regard to two features.

The first feature is on the x-axis (left to right), and the second on y-axis (top to bottom) contrary to the plot where it is bottom to top.

Note

For non percentiled values the PlotText part does not seem always to work, but I currently dont know why the text does not always overlap with the heatmap.

Author(s)

Michael Thrun

References

[Charpentier. 2014] Charpentier, Arthur, ed. Computational actuarial science with R. CRC Press, 2014.

See Also

[table](#), [image](#), [PDEscatter](#)

Examples

```
data(ITS)
data(MTY)
#simple but not a good transformation
Data=(cbind(ITS/max(ITS),MTY/max(MTY)))*100
#choice for bins could be better
Crosstable(Data)
```

DefaultColorSequence *Default color sequence for plots*

Description

Defines the default color sequence for plots made within the Projections package.

Usage

```
data("DefaultColorSequence")
```

Format

A vector with 562 different strings describing colors for plots.

DualaxisClassplot *Dualaxis Classplot*

Description

Allows to plot two time series or features with one or two classification(a) as labeled scatter plots. The colors are the labels defined by the classification. Usefull to see if temporal clustering has time dependent variations and for Hidden Markov Models (see Mthrun/RHmm on GitHub).

Usage

```
DualaxisClassplot(X, Y1, Y2, Cls1,
  Cls2, xlab = "X", y1lab = "Y1", y2lab = "Y2",
  main = "Dual Axis Class Plot", Colors, Showgrid = TRUE, SaveIt = FALSE)
```

Arguments

X	[1:n] numeric vector or time
Y1	[1:n] numeric vector of feature
Y2	[1:n] numeric vector of feature
Cls1	[1:n] numeric vector defining a classification of k1 classes
Cls2	Optional, [1:n] numeric vector defining a classification of k2 classes for Y2
xlab	Optional, string
y1lab	Optional, string
y2lab	Optional, string
main	Optional, string
Colors	[1:(k1+k2)] Colornames
Showgrid	Optional, boolean
SaveIt	Optional, boolean

Value

plotly object

Author(s)

Michael Thrun

See Also[Classplot](#)**Examples**

##ToDo

DualaxisLinechart *DualaxisLinechart*

Description

A line chart with dual axisSS

Usage

```
DualaxisLinechart(X, Y1, Y2, xlab = "X",
y1lab = "Y1", y2lab = "Y2", main = "Dual Axis Line Chart",
cols = c("black", "blue"), SaveIt = FALSE)
```

Arguments

X	[1:n] vector, both lines require the same xvalues, e.g. the time of the time series, POSIXlt or POSIXct are accepted
Y1	[1:n] vector of first line
Y2	[1:n] vector of second line
xlab	Optional, string for xlabel
y1lab	Optional, string for first ylabel
y2lab	Optional, string for second ylabel
main	Optional, title of plot
cols	Optional, color of two lines
SaveIt	Optional, default FALSE; TRUE if you want to save plot as html in getwd() directory

Details

enables to visualize to lines in one plot overlaying them using ploty (e.g. two time series with two ranges of values)

Value

plotly object

Author(s)

Michael Thrun

Examples

#

Fanplot

The fan plot

Description

The better alternative to the pie chart represents amount of values given in data.

Usage

```
Fanplot(Datavector,Names,Labels,MaxNumberOfSlices,main='',col,
MaxPercentage=FALSE,ShrinkPies=0.05,Rline=1.1)
```

Arguments

Datavector	[1:n] a vector of n non unique values
Names	Optional, [1:k] names to search for in Datavector, if not set unique of Datavector is calculated.
Labels	Optional, [1:k] Labels if they are specially named, if not Names are used.
MaxNumberOfSlices	Default is k, integer value defining how many labels will be shown. Everything else will be summed up to Other.
main	Optional, title below the fan pie, see plot
col	Optional, default as other colors in this packages, else the same as in plot
MaxPercentage	default FALSE; if true the biggest slice is 100 percent instead of the biggest procentual count
ShrinkPies	Optional, distance between biggest and smallest slice of the pie
Rline	Optional, the distance between text and pie is defined here as the length of the line in numerical numbers

Details

A normal pie plot is difficult to interpret for a human observer, because humans are not trained well to observe angles [Gohil, 2015, p. 102]. Therefore, the fan plot is used. As proposed in [Gohil 2015] the `fan.plot()` of the `plotrix` package is used to solve this problem. If `NumberOfSlices` is higher than `MaxNumberOfSlices` then `ABCanalysis` is applied (see [Ultsch/Lotsch, 2015]) and group A chosen. If `NumberOfSlices` in group A is higher than `MaxNumberOfSlices`, then the most important ones out of group A are chosen. If `MaxNumberOfSlices` is higher than `Slices` in group A, additional slices are shown depending on the percentage (from high to low).

Value

silent output by calling `invisible` of a list with

Percentages	[1:k] percent values visualized in fanplot
Labels	[1:k] see input <code>Labels</code> , only relevant ones

Author(s)

Michael Thrun

References

[Gohil, 2015] Gohil, Atmajitsinh. R data Visualization cookbook. Packt Publishing Ltd, 2015.

[Ultsch/Lotsch, 2015] Ultsch. A., Lotsch J.: Computed ABC Analysis for Rational Selection of Most Informative Variables in Multivariate Data, PloS one, Vol. 10(6), pp. e0129767. doi 10.1371/journal.pone.0129767, 2015.

Examples

```
data(categoricalVariable)
Fanplot(categoricalVariable)
```

FundamentalData_Q1_2018

Fundamental Data of the 1st Quarter in 2018

Description

This dataset was extracted out of Yahoo finance and was investigated in [Thrun et al., 2019] and clustered in [Thrun, 2019].

Usage

```
data("FundamentalData_Q1_2018")
```

Format

The format is: List of 3 \$ Data : 'data.frame': 269 obs. of 45 variables: ..\$ TotalRevenue : num [1:269] 3779000 78225 48220 63726 3084\$ CostofRevenue : num [1:269] 2348000 60835 26174 35203 882\$ GrossProfit : num [1:269] 1431000 17390 22046 28523 2202\$ SellingGeneralandAdministrative : num [1:269] 459000 NaN 15162 17072 2005\$ Others : num [1:269] -3000 10272 -52 3131 1784\$ TotalOperatingExpenses : num [1:269] 2872000 73833 41284 56787 5081\$ OperatingIncomeorLoss : num [1:269] 907000 4392 6936 6939 -1997\$ TotalOtherIncomeDIVxpensesNet : num [1:269] -28000 -344 1 -210 -240\$ EarningsBeforeInterestandTaxes : num [1:269] 907000 4392 6936 6939 -1997\$ InterestExpense : num [1:269] -20000 -415 NaN -243 -238\$ IncomeBeforeTax : num [1:269] 879000 4048 6937 6729 -2237\$ IncomeTaxExpense : num [1:269] 233000 1365 2188 1896 7\$ NetIncomeFromContinuingOps : num [1:269] 646000 2683 4749 4833 -2244\$ NetIncome_x : num [1:269] 644000 2817 4645 4833 -2244\$ NetIncome : num [1:269] 644000 2817 4645 4833 -2244\$ CashAndCashEquivalents : num [1:269] 926000 29047 45911 94859 11217\$ NetReceivables : num [1:269] 2527000 46171 20774 151952 2774\$ Inventory : num [1:269] 2011000 471 NaN 10572 8924\$ TotalCurrentAssets : num [1:269] 5674000 80224 68061 267187 25989\$ LongTermInvestments : num [1:269] 234000 450 NaN 4155 872\$ PropertyPlantandEquipment : num [1:269] 4216000 14561 3093 32247 7073\$ IntangibleAssets : num [1:269] 78000 40706 3975 6169 125\$ OtherAssets : num [1:269] 810000 8224 1091 2978 13310\$ DeferredLongTermAssetCharges : num [1:269] 759000 684 1091 784 1405\$ TotalAssets : num [1:269] 11262000 167807 83155 351220 47369\$ AccountsPayable : num [1:269] 1442000 10567 1698 17316 1386\$ ShortDIVurrentLongTermDebt : num [1:269] 1275000 30192 NaN 26668 917\$ OtherCurrentLiabilities : num [1:269] 1064000 36942 22781 92297 2659\$ TotalCurrentLiabilities : num [1:269] 2577000 54430 24479 114210 4299\$ OtherLiabilities : num [1:269] 1795000 19435 6876 29347 2018\$ TotalLiabilities : num [1:269] 5576000 97136 31355 165628 6980\$ CommonStock : num [1:269] 198000 14946 5198 15250 28644\$ RetainedEarnings : num [1:269] NaN 44030 34767 40374 -8965\$ TreasuryStock : num [1:269] 5455000 11686 NaN 129968 20710\$ OtherStockholderEquity : num [1:269] 5455000 11686 NaN 129968 20710\$ TotalStockholderEquity : num [1:269] 5653000 70662 51212 185592 40389\$ NetTangibleAssets : num [1:269] 5325000 6314 40302 140939 40264\$ Depreciation : num [1:269] 156000 2728 331 1381 410\$ AdjustmentsToNetIncome : num [1:269] 216000 1911 116 2912 39\$ ChangesInOtherOperatingActivities : num [1:269] -20000 -2174 -829 NaN 428\$ TotalCashFlowFromOperatingActivities : num [1:269] 452000 7349 4274 -8241 -1367\$ CapitalExpenditures : num [1:269] -88000 -966 -1778 -2067 -155\$ TotalCashFlowsFromInvestingActivities : num [1:269] 30000 -879 -1766 -2746 -484\$ TotalCashFlowsFromFinancingActivities : num [1:269] -789000 -6660 -21867 -961 -204\$ ChangeInCashandCashEquivalents : num [1:269] -306000 -215 2508 -11842 -2062 ... \$ Names: chr [1:269, 1:6] "ICOV" "A1OS" "AAD" "AAG"- attr(*, "dimnames")=List of 2 .. \$: NULL\$: chr [1:6] "Key" "ISIN" "Company" "Sector" ... \$ Cls : num [1:269] 1 1 1 1 2 1 1 1 3 1 ...

Details

Stocks are selected by the German Prime standard accordingly to the "Names" data frame. Fundamental Data with missing values is stored in "Data". The rownames of "Data" have the same Key as the first row of "Names" which is the trading symbol. "Cls" provides the clustering as a numerical vector of 1:k classes performed by Databionic Swarm in [Thrun, 2019].

Source

Yahoo finance

References

Thrun, M. C., : Knowledge Discovery in Quarterly Financial Data of Stocks Based on the Prime Standard using a Hybrid of a Swarm with SOM, in Verleysen, M. (Ed.), European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN), Vol. 27, pp. 397-402, Ciaco, ISBN: 978-287-587-065-0, Bruges, Belgium, 2019.

[Thrun et al., 2019] Thrun, M. C., Gehlert, Tino, & Ultsch, A. : Analyzing the Fine Structure of Distributions, arXiv:1908.06081, 2019.

Examples

```
data(FundamentalData_Q1_2018)
## maybe str(FundamentalData_Q1_2018) ; plot(FundamentalData_Q1_2018) ...
```

GoogleMapsCoordinates *Google Maps with marked coordinates*

Description

Google Maps with marked coordinates.

Usage

```
GoogleMapsCoordinates(Longitude, Latitude, Cls=rep(1, length(Longitude)),
zoom=3, location= c(mean(Longitude), mean(Latitude)), stroke=1.7, size=6, sequence)
```

Arguments

Longitude	sphaerischer winkel der Kugeloberflaeche, coord 1
Latitude	sphaerischer winkel der Kugeloberflaeche, coord 2
Cls	Vorklassification/Clusterung
zoom	map zoom, an integer from 3 (continent) to 21 (building), default value 10 (city). openstreetmaps limits a zoom of 18, and the limit on stamen maps depends on the matype. "auto" automatically determines the zoom for bounding box specifications, and is defaulted to 10 with center/zoom specifications. maps of the whole world currently not supported
location	Optional, default: c(mean(Longitude), mean(Latitude)); an address, longitude/latitude pair (in that order), or left/bottom/right/top bounding box
stroke	Optional, plotting parameter, dicke der linien der coordiantensymbole
size	Optional, plotting parameter, gresse der koordinatensymbole
sequence	Optional, vector of length of number of clusers with numbers indicating the plotting symbols and colors to use

Details

This plot was used in [Thrun, 2018, p. 135].

Value

ggobject()

Note

requires an Internet connection, requires an API key of Google. See `?ggmap::register_google` for details.

Author(s)

Michael Thrun

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, ISBN: 978-3-658-20539-3, Heidelberg, 2018.

Heatmap

Heatmap for Clustering

Description

Heatmap of Distances of Data sorted by Cls

Usage

```
Heatmap(DataOrDistances,Cls,method='euclidean',LowLim=0,HiLim)
```

Arguments

DataOrDistances	[1:n,1:d] data cases in rows, variables in columns, if not symmetric or [1:n,1:n] distance matrix, if symmetric
Cls	numeric vector, [1:n,1] classified data
method	Optional, if Data[1:n,1:d] see <code>dist</code> for distance method
LowLim	Optional: limits for the color axis
HiLim	Optional: limits for the color axis

Details

Clustering algorithms provide a Classification of data, where the labels are defined as a numeric vector Cls

Then, a typical cluster-respectively group structure is displayed by the HeatMap function. At the margin of the heatmap a dendrogram can be shown, if hierarchical cluster algorithms are used. Here the dendrogram has to be shown separately and only the heatmap itself is displayed [Wilkinson,2009].

More details in [Thrun, 2018, p. 29]

Value

object of ggplot2

Author(s)

Michael Thrun

References

[Wilkinson,2009] Wilkinson, L., & Friendly, M.: The history of the cluster heat map, The American Statistician, Vol. 63(2), pp. 179-184. 2009.

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, Heidelberg, ISBN: 978-3-658-20539-3, <https://doi.org/10.1007/978-3-658-20540-9>, 2018.

See Also

[Pixelmatrix](#)

Examples

```
data("Lsun3D")
Cls=Lsun3D$Cls
Data=Lsun3D$Data

Heatmap(as.matrix(dist(Data)),Cls = Cls)
```

HeatmapColors

Default color sequence for plots

Description

Defines the default color sequence for plots made with PixelMatrixPlot

Usage

```
data("HeatmapColors")
```

Format

A vector with different strings describing colors for this plot.

inPSphere2D	<i>2D data points in Pareto Sphere</i>
-------------	--

Description

This function determines the 2D data points inside a ParetoSphere with ParetoRadius.

Usage

```
inPSphere2D(data, paretoRadius=NULL)
```

Arguments

data	numeric matrix of data.
paretoRadius	numeric value. radius of P-spheres. If not given, calculate by the function 'paretoRad'

Value

numeric vector with the number of data points inside a P-sphere with ParetoRadius.

Author(s)

Felix Pape

InspectBoxplots	<i>Enables to Insptecd the Boxplots for Multiple variables</i>
-----------------	--

Description

This function creates a boxplot for each variable of the data matrix. Each boxplot also has a point for the mean of the variable.

Usage

```
InspectBoxplots(Data, Names, Means=TRUE)
```

Arguments

Data	Matrix containing the data. Each column is one variable.
Names	Optional: Names of the variables. If missing the columnnames of data are used.
Means	Optional: TRUE: with mean, FALSE: Only median.

Value

The ggplot object of the boxplots

Author(s)

Felix Pape

Examples

```
x <- cbind(A = rnorm(200, 1, 3), B = rnorm(100, -2, 5))
InspectBoxplots(x)
```

InspectDistances

Inspection of Distance-Distribution

Description

Visualizes the distances between objects in the data matrix

Usage

```
InspectDistances(DataOrDistances,method= "euclidean",sampleSize = 50000,...)
```

Arguments

DataOrDistances	[1:n,1:d] data cases in rows, variables in columns, if not symmetric or [1:n,1:n] distance matrix, if symmetric
method	Optional, if Data[1:n,1:d] see <code>parallelDist::parDist</code> for distance method
sampleSize	double value defining the size of the sample for large distance matrices, see <code>InspectVariable</code>
...	further arguments passed on to <code>InspectVariable</code>

Details

For an interpretation of the distribution analysis of the distance please read [Thrun, 2018, p. 27, 185].

Note

uses InspectVariable

Author(s)

Michael Thrun

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, ISBN: 978-3-658-20539-3, Heidelberg, 2018.

Examples

```
data("Lsun3D")
Data=Lsun3D$Data

InspectDistances(as.matrix(dist(Data)))
```

InspectScatterplots *Pairwise scatterplots and optimal histograms*

Description

Pairwise scatterplots and optimal histograms of all features stored as columns of data are plotted

Usage

```
InspectScatterplots(Data,Names=colnames(Data))
```

Arguments

Data	[1:n,1:d] Data cases in rows (n), variables in columns (d)
Names	Optional: Names of the variables. If missing the columnnames of data are used.

Details

For two features, PDEscatter function should be used to inspect modalities [Thrun/Ultsch, 2018]. For many features the function takes too long. In such a case this function can be used. See [Thrun/Ultsch, 2018] for optimal histogram description.

Author(s)

Michael Thrun

References

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A.: Effects of the payout system of income taxes to municipalities in Germany, 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, Vol. accepted, Foundation of the Cracow University of Economics, Zakopane, Poland, 2018.

Examples

```
Data=cbind(rnorm(100, mean = 2, sd = 3 ),rnorm(100,mean = 0, sd = 1),rnorm(100,mean = 6, sd = 0.5))
#InspectScatterplots(Data)
```

```
InspectStandardization
```

QQplot of Data versus Normalized Data

Description

Allows to inspect if standardization of data makes sense

Usage

```
InspectStandardization(Data, TransData, xug = -3, xog = 3, xlab = "Normal", yDataLab =
"Data", yTransDataLab = "Trasformed Data", Symbol4Gerade = "red", main = "", ...)
```

Arguments

Data	...
TransData	...
xug	...
xog	...
xlab	...
yDataLab	...
yTransDataLab	...
Symbol4Gerade	...
main	...
...	...

Details

...

Value

plot

Author(s)

Michael Thrun

References

Michael, J. R.: The stabilized probability plot, *Biometrika*, Vol. 70(1), pp. 11-17, 1983.

InspectVariable

Visualization of Distribution of one variable

Description

Enables distribution inspection by visualization as described in [Thrun, 2018] and for example used in

Usage

```
InspectVariable(Feature, N = "Feature", i = 1, xlim, ylim,
               sampleSize = 1e+05, main)
```

Arguments

Feature	[1:n] Variable/Vector of Data to be plotted
N	Optional, string, for x label
i	Optional, No. of variable/feature, an integer of the for lope
xlim	[2] Optional, range of x-axis for PDEplot
ylim	[2] Optional, range of y-axis for PDEplot
sampleSize	Optional, default(100000), sample size, if datavector is to big
main	string for the title if other than what is described in N

Author(s)

Michael Thrun

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, ISBN: 978-3-658-20539-3, Heidelberg, 2018.

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech,, S. (eds.), Proc. 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

Examples

```
data("ITS")
InspectVariable(ITS,N='Income in EUR',main='ITS')
```

ITS	<i>Income Tax Share</i>
-----	-------------------------

Description

Numerical vector of length 11194. details in [Ultsch/Behnisch, 2017; Thrun/Ultsch, 2018].

Usage

```
data("ITS")
```

References

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech,, S. (eds.), Proc. 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

[Ultsch/Behnisch, 2017] Ultsch, A., Behnisch, M.: Effects of the payout system of income taxes to municipalities in Germany, Applied Geography, Vol. 81, pp. 21-31, 2017.

Examples

```
data(ITS)
str(ITS)
```

Lsun3D	<i>Lsun3D inspired by FCPS</i>
--------	--------------------------------

Description

clearly defined clusters, different variances

Usage

```
data("Lsun3D")
```

Details

Size n=404, Dimensions d=3

Dataset defined discontinuities, where the clusters have different variances. Three main Clusters, and four Outliers (in Cluster 4), see [Thrun, 2018]

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, ISBN: 978-3-658-20540-9, Heidelberg, 2018.

Examples

```
data(Lsun3D)
str(Lsun3D)
Cls=Lsun3D$Cls
Data=Lsun3D$Data
```

MAplot *Minus versus Add plot*

Description

Bland-Altman plot [Altman/Bland, 1983].

Usage

```
MAplot(x,y,islog=TRUE,densityplot=FALSE,
main='MA-plot',xlab,ylab,Cls)
```

Arguments

x	[1:n] numerical vector of a feature/variable
y	[1:n] another numerical vector of a feature/variable
islog	TRUE: MAplot, FALSE: $M=x-y$ versus $a=0.5(x+y)$
densityplot	FALSE: Scatterplot, TRUE: density scatter plot with PDE
main	see plot
xlab	see plot
ylab	see plot
Cls	prior Classification as a numeric vector.

Details

Bland-Altman plot [Altman/Bland, 1983] for visual representation of genomic data or in order to decorrelate data.

Value

MA [1:n,2] Matrix of Minus component of two features and Add component of two features

ggplot see ggplot2 output, if densityplot=TRUE, else NULL

Author(s)

Michael Thrun

References

[Altman/Bland, 1983] Altman D.G., Bland J.M.: Measurement in medicine: the analysis of method comparison studies, *The Statistician*, Vol. 32, p. 307-317, doi:10.2307/2987937, 1983.

[Ultsch, 2005] Ultsch, A.: Pareto Density Estimation: A Density Estimation for Knowledge Discovery, Baier D., Wernecke K.D. (Eds), In *Innovations in Classification, Data Science, and Information Systems - Proceedings 27th Annual Conference of the German Classification Society (GfKL) 2003*, Berlin, Heidelberg, Springer, pp, 91-100, 2005.

Examples

```
#taken from [Thrun/Ultsch, 2018]
data("ITS")
data("MTY")
MAlist=MAplot(ITS,MTY)
```

MDplot *Mirrored Density plot (MD-plot)*

Description

This function creates a MD-plot for each variable of the data matrix. The MD-plot is a visualization for a boxplot-like Shape of the PDF published in [Thrun et al., 2019]. It is an improvement of violin or so-called bean plots and posses advantages in comparison to the conventional well-known box plot [Thrun et al., 2019].

Usage

```
MDplot(Data, Names, Ordering='Default', Scaling="None",
Fill='darkblue', RobustGaussian=TRUE, GaussianColor='magenta',
Gaussian_lwd=1.5, BoxPlot=FALSE, BoxColor='darkred',
MDscaling='width',Size=0.01, MinimalAmountOfData=40,
MinimalAmountOfUniqueData=12, SampleSize=5e+05, OnlyPlotOutput=TRUE)
```

Arguments

Data	[1:n,1:d] Numerical Matrix containing the n cases of d variables. Each column is one variable. A data.frame is automatically transformed to a numerical matrix.
Names	Optional: [1:d] Names of the variables. If missing, the columnnames of data are used.
Ordering	Optional: string, either Default, Columnwise, Alphabetical or Statistics. Please see details for explanation.
Scaling	Optional, Default is None, Percentalize, CompleteRobust, Robust or Log, Please see details for explanation.
Fill	Optional: string, color with which MDs are to be filled with.
RobustGaussian	Optional: If TRUE: each MDplot of a variable is overlaid with a robustly estimated unimodal Gaussian distribution in the range of this variable, if statistical testing does not yield a significant p.value. In this case the packages moments , diptest and signal are required.
GaussianColor	Optional: string, color of robustly estimated gaussian, only for RobustGaussian=TRUE.
Gaussian_lwd	Optional: numerical, line width of robustly estimated gaussian, only for RobustGaussian=TRUE.
BoxPlot	Optional: If TRUE: each MDplot is overlaid with a Box-Whisker Diagram.
BoxColor	Optional: string, color of Boxplot, only for BoxPlot=TRUE.
MDscaling	Optional: if "area", all violins have the same area (before trimming the tails). If "count", areas are scaled proportionally to the number of observations. If "width" (default), all MDs have the same maximum width.
Size	Optional: numerical, linewidth of black line around the MDs.
MinimalAmountOfData	Optional: numeric value defining a threshold. Below this threshold no density estimation is performed and a Jitter plot with a median line is drawn. Only Data Science experts should change this value after they understand how the density is estimated (see [Ultsch, 2005]).
MinimalAmountOfUniqueData	Optional: numeric value defining a threshold. Below this threshold no density estimation and statistical testing is performed and a Jitter plot with a median line is drawn. Only Data Science experts should change this value after they understand how the density is estimated (see [Ultsch, 2005]).
SampleSize	Optional: numeric value defining a threshold. Above this threshold uniform sampling of finite cases is performed in order to shorten computation time. If rowr is not installed, uniform sampling of all cases is performed. If required, SampleSize=n can be set to omit this procedure.
OnlyPlotOutput	Default TRUE only a ggplot object is given back, if FALSE: Additionally Scaled Data and ordering are the output of this function in a list.

Details

In short, the MD-plot can be described as a PDE optimized violin plot. The Pareto Density Estimation (PDE) is an approach to estimate the probability density function (pdf) [Ultsch, 2005].

MD plot was used in [Thrun et al.,2018] for the evaluation of stochastic clustering methods and used in [Thrun et al.,2018a] in order to simultaneously estimate variances of a high-dimensional data set. The MD-plot is in the process of being peer-reviewed [Thrun/Ultsch, 2019].

Statistical testing is performed with `dip.test` and `agostino.test`.

For the parameter `Ordering` the following options are possible:

Default Ordering of plots by convex/concav/unimodal/nonunimodal shapes. In this case the **signal** is required.

Columnwise Ordering of plots by the order of columns of Data.

Alphabetical Ordering of plots by the order of columns of Data sorted in alphabetical order by column names.

Statistics Ordering of plots depending on the logarithm of the p-values of statistical testing. In this case the packages **moments**, **diptest** and **signal** are required.

For the parameter `Scaling` the following options are possible:

None No Scaling of data is done.

Percentalize Data is scaled between zero and 100.

CompleteRobust Data is first robustly scaled between zero and 1, then centered to zero and outliers are capped by a robustly formula described in the **DatabionicSwarm** package.

Robust Data is robustly scaled between zero and 1 by a formula described in the **DatabionicSwarm** package.

Log Data is transformed with a signed log allowing for negative values to be transformed with a logarithm of base 10, please see `SignedLog` for details.

Value

In the default case of `OnlyPlotOutput==TRUE`: The ggplot object of the MD-plot.

Otherwise for `OnlyPlotOutput==FALSE`: A list of

`ggplotObj` The ggplot object of the MD-plot.

`Ordering` The ordering of columns of data defined by `Ordering`.

`DataOrdered` [1:n,1:d] matrix of ordered and scaled data defined by `Ordering` and `Scaling`.

Note that the package **ggExtra** is not necessarily required but if given the feature names are automatically rotated.

Note

1.) One would assume that in the first of the two following cases ggplot only adjusts the plotting region but:

`MDplot(MTY)+ylim(c(0,7000))` is equal to `MDplot(MTY[MTY<7000])`.

This means in both cases the data is clipped and AFTERWARDS the density estimation is performed.

2.) Because of a (sometimes) strange behavior of either `ggplot2` or `reshape2`, numerical column names are changed to character by adding `'C_'`.

3.) Overlaying MD-plots with robustly estimated gaussians seldomly will yield magenta (or other GaussianColor) lines overlaying more than the violin plot they should overlay, because the width of the two plots is not the same (but I am unable to set it strictly in ggplot). In such a case just call the function again.

Author(s)

Michael Thrun, Felix Pape contributed with the idea to use ggplot2 as the basic framework.

References

[Ultsch, 2005] Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, in Baier, D.; Wernicke, K. D., (Eds), Innovations in classification, data science, and information systems, Proc Gfkl 2003, pp 91-100, Springer, Berlin, 2005.

[Thrun et al., 2018a] Thrun, M. C., Breuer, L., & Ultsch, A. : Knowledge discovery from low-frequency stream nitrate concentrations: hydrology and biology contributions, Proc. European Conference on Data Analysis (ECDA), pp. 46-47, Paderborn, Germany, 2018.

[Thrun et al., 2018b] Thrun, M. C., Pape, F., & Ultsch, A. : Benchmarking Cluster Analysis Methods using PDE-Optimized Violin Plots, Proc. European Conference on Data Analysis (ECDA), p. 26, Paderborn, Germany, 2018.

[Thrun et al., 2019] Thrun, M. C., Gehlert, Tino, & Ultsch, A. : Analyzing the Fine Structure of Distributions, arXiv:1908.06081, 2019.

See Also

ClassMDplot <https://pypi.org/project/md-plot/>

Examples

```
x <- cbind(A = runif(20000, 1, 5), B = c(rnorm(10000,0,1),rnorm(10000,2.6,1)),
          C = c(rnorm(20000,2.5,1)),D=rpois(20000,5))
MDplot(x)
```

MDplot4multiplevectors

Mirrored Density plot (MD-plot)for Multiple Vectors

Description

This function creates a MD-plot for multiple numerical vectors of various lengths. The MD-plot is a visualization for a boxplot-like Shape of the PDF published in [Thrun et al., 2019]. It is an improvement of violin or so-called bean plots and posses advantages in comparison to the conventional well-known box plot [Thrun et al., 2019].

Usage

```
MDplot4multiplevectors(..., Names, Ordering='Default', Scaling="None",
Fill='darkblue', RobustGaussian=TRUE, GaussianColor='magenta',
Gaussian_lwd=1.5, BoxPlot=FALSE, BoxColor='darkred',
MDscaling='width', Size=0.01, MinimalAmountOfData=40,
MinimalAmountOfUniqueData=12, SampleSize=5e+05, OnlyPlotOutput=TRUE)
```

Arguments

...	Either d numerical vectors of different lengths or a list of length d where each element of the list is an vector of arbitrary length
Names	Optional: [1: d] Names of the the numerical vectors. If missing, the column-names are numbered.
Ordering	Optional: string, either Default, Columnwise, Alphabetical or Statistics. Please see details for explanation.
Scaling	Optional, Default is None, Percentalize, CompleteRobust, Robust or Log, Please see details for explanation.
Fill	Optional: string, color with which MDs are to be filled with.
RobustGaussian	Optional: If TRUE: each MDplot is overlaid with a robustly estimated unimodal Gaussian distribution, if statistical testing does not yield a significant p.value. In this case the packages moments , diptest and signal are required.
GaussianColor	Optional: string, color of robustly estimated gaussian, only for RobustGaussian=TRUE.
Gaussian_lwd	Optional: numerical, line width of robustly estimated gaussian, only for RobustGaussian=TRUE.
BoxPlot	Optional: If TRUE: each MDplot is overlaid with a Box-Whisker Diagram.
BoxColor	Optional: string, color of Boxplot, only for BoxPlot=TRUE.
MDscaling	Optional: if "area", all violins have the same area (before trimming the tails). If "count", areas are scaled proportionally to the number of observations. If "width" (default), all MDs have the same maximum width.
Size	Optional: numerical, linewidth of black line around the MDs.
MinimalAmountOfData	Optional: numeric value defining a threshold. Below this threshold no density estimation is performed and a Jitter plot with a median line is drawn. Only Data Science experts should change this value after they understand how the density is estimated (see [Ultsch, 2005]).
MinimalAmountOfUniqueData	Optional: numeric value defining a threshold. Below this threshold no density estimation and statistical testing is performed and a Jitter plot with a median line is drawn. Only Data Science experts should change this value after they understand how the density is estimated (see [Ultsch, 2005]).

SampleSize	Optional: numeric value defining a threshold. Above this threshold uniform sampling of finite cases is performed in order to shorten computation time. If rowr is not installed, uniform sampling of all cases is performed. If required, SampleSize=n can be set to omit this procedure.
OnlyPlotOutput	Default TRUE only a ggplot object is given back, if FALSE: Additionally Scaled Data and ordering are the output of this function in a list.

Details

Please see [MDplot](#) for details.

Value

In the default case of OnlyPlotOutput==TRUE: The ggplot object of the MD-plot.

Otherwise for OnlyPlotOutput==FALSE: A list of

ggplotObj	The ggplot object of the MD-plot.
Ordering	The ordering of columns of data defined by Ordering.
DataOrdered	[1:n,1:d] matrix of ordered and scaled data defined by Ordering and Scaling.

Note that the package **ggExtra** is not necessarily required but if given the feature names are automatically rotated.

Author(s)

Michael Thrun.

References

[Ultsch, 2005] Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, in Baier, D.; Werrnecke, K. D., (Eds), Innovations in classification, data science, and information systems, Proc Gfkl 2003, pp 91-100, Springer, Berlin, 2005.

[Thrun et al., 2019] Thrun, M. C., Gehlert, Tino, & Ultsch, A. : Analyzing the Fine Structure of Distributions, arXiv:1908.06081, 2019.

[Thrun et al.,2018a] Thrun, M. C., Breuer, L., & Ultsch, A. : Knowledge discovery from low-frequency stream nitrate concentrations: hydrology and biology contributions, Proc. European Conference on Data Analysis (ECDA), pp. 46-47, Paderborn, Germany, 2018.

[Thrun et al.,2018b] Thrun, M. C., Pape, F., & Ultsch, A. : Benchmarking Cluster Analysis Methods using PDE-Optimized Violin Plots, Proc. European Conference on Data Analysis (ECDA), p. 26, Paderborn, Germany, 2018.

See Also

[ClassMDplot MDplot](https://pypi.org/project/md-plot/) <https://pypi.org/project/md-plot/>

Examples

```
MDplot4multiplevectors(runif(20000, 1, 5),c(rnorm(20000,0,1),
rnorm(20000,2.6,1)),c(rnorm(2000,2.5,1)),rpois(25000,5),
Names=c('A','B','C','D'))
V=list(runif(20000, 1, 5),c(rnorm(20000,0,1),
rnorm(20000,2.6,1)),c(rnorm(2000,2.5,1)),rpois(25000,5))
MDplot4multiplevectors(V,Names=c('A','B','C','D'))
```

MTY

Municipal Income Tax Yield

Description

Numerical vector of length 11194. details in [Ultsch/Behnisch, 2017; Thrun/Ultsch, 2018].

Usage

```
data("MTY")
```

References

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech,, S. (eds.), Proc. 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

[Ultsch/Behnisch, 2017] Ultsch, A., Behnisch, M.: Effects of the payout system of income taxes to municipalities in Germany, Applied Geography, Vol. 81, pp. 21-31, 2017.

Examples

```
data(MTY)
str(MTY)
```

`OptimalNoBinsV2`*Optimal Number Of Bins*

Description

Optimal Number Of Bins is a kernel density estimation for fixed intervals.
Calculation of the optimal number of bins for a histogram.

Usage

```
OptimalNoBinsV2(Data)
```

Arguments

```
Data          Data
```

Details

The bin width is defined with $bw=3.49*\text{stdrobust}(1/(n)^{1/3})$

Value

`optNrOfBins` The best possible number of bins. Not less than 10 though

Note

This is the second version of the function prior available in **AdaptGauss**

Author(s)

Alfred Ultsch, Michael Thrun

References

David W. Scott Jerome P. Keating: A Primer on Density Estimation for the Great Home Run Race of 98, *STATS* 25, 1999, pp 16-22.

See Also

`ParetoRadiusV2`

Examples

```
Data = c(rnorm(1000),rnorm(2000)+2,rnorm(1000)*2-1)
```

```
optNrOfBins = OptimalNoBinsV2(Data)
```

```
minData = min(Data,na.rm = TRUE)
```

```

maxData = max(Data,na.rm = TRUE)

i = maxData-minData

optBreaks = seq(minData, maxData, i/optNrOfBins) # bins in fixed intervals

hist(Data, breaks=optBreaks)

```

ParetoDensityEstimationV2

Pareto Density EstimationV2

Description

This function estimates the Pareto Density for the distribution of one variable.

Usage

```

ParetoDensityEstimationV2(Data, paretoRadius, kernels = NULL,
  MinAnzKernels = 100)

```

Arguments

Data	numeric vector of data.
paretoRadius	Optional, numeric value, see ParetoRadius
kernels	Optional, numeric vector. data values where pareto density is measured at. If 0 (by default) kernels will be computed.
MinAnzKernels	Optional, minimal number of kernels, default MinAnzKernels==100

Details

Pareto Density Estimation (PDE) is a method for the estimation of probability density functions using hyperspheres. The Pareto-radius of the hyperspheres is derived from the optimization of information for minimal set size. It is shown, that Pareto Density is the best estimate for clusters of Gaussian structure. The method is shown to be robust when cluster overlap and when the variances differ across clusters. This is the best density estimation to judge Gaussian Mixtures of the data see [Ultsch 2003]

Value

List With

kernels: numeric vector. data values at with Pareto Density is measured.

paretoDensity: numeric vector containing the determined density by ParetoRadius.

paretoRadius: numeric value.

Note

This the second version of the function prior available in **AdaptGauss**

Author(s)

Michael Thrun

References

Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, in Baier, D.; Werrnecke, K. D., (Eds), Innovations in classification, data science, and information systems, Proc Gfkl 2003, pp 91-100, Springer, Berlin, 2005.

See Also

ParetoRadiusV2

Examples

```
data = c(rnorm(1000),rnorm(2000)+2,rnorm(1000)*2-1)
pdeVal <- ParetoDensityEstimationV2(data)
plot(pdeVal$kernel, pdeVal$paretoDensity, type='l', xaxs='i',
yaxs='i', xlab='Data', ylab='PDE')
```

ParetoRadiusV2

ParetoRadius for distributions

Description

Calculation of the ParetoRadius i.e. the 18 percentiles of all mutual Euclidian distances in data.

Usage

```
ParetoRadiusV2(Data, maximumNrSamples = 10000,
plotDistancePercentiles = FALSE)
```

Arguments

Data numeric data vector

maximumNrSamples

Optional, numeric. Maximum number for which the distance calculation can be done. 1000 by default.

plotDistancePercentiles

Optional, logical. If TRUE, a plot of the percentiles of distances is produced. FALSE by default.

Details

The Pareto-radius of the hyperspheres is derived from the optimization of information for minimal set size. `ParetoRadius()` is a kernel density estimation for variable intervals. It works only on Data without missing values (NA) or NaN. In other cases, please use `ParetoDensityEstimation` directly.

Value

numeric value, the Pareto radius.

Note

This the second version of the function prior available in **AdaptGauss**

Author(s)

Michael Thrun

References

Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, in Baier, D.; Werrnecke, K. D., (Eds), Innovations in classification, data science, and information systems, Proc Gfkl 2003, pp 91-100, Springer, Berlin, 2005.

See Also

`ParetoDensityEstimationV2`, `OptimalNoBins`

PDEplot

PDE plot

Description

This function plots the Pareto probability density estimation (PDE), uses `PDEstimationForGauss` and `ParetoRadius`.

Usage

```
PDEplot(data, paretoRadius = 0, weight = 1, kernels = NULL,  
  
         LogPlot = F, PlotIt = TRUE, title =  
         "ParetoDensityEstimation(PDE)", color = "blue",  
  
         xpoints = FALSE, xlim, ylim, xlab = "Data", ylab =  
         "PDE", ggPlot = ggplot(), sampleSize = 2e+05, lwd = 2)
```

Arguments

<code>data</code>	numeric vector, data to be plotted.
<code>paretoRadius</code>	numeric, the Pareto Radius. If omitted, calculate by <code>paretoRad</code> .
<code>weight</code>	numeric, <code>Weight*ParetoDensity</code> is plotted. 1 by default.
<code>kernels</code>	numeric vector of kernels. Optional
<code>LogPlot</code>	LogLog PDEplot if TRUE, <code>xpoints</code> has to be FALSE. Optional
<code>PlotIt</code>	logical, if plot. TRUE by default.
<code>title</code>	character vector, title of plot.
<code>color</code>	character vector, color of plot.
<code>xpoints</code>	logical, if TRUE only points are plotted. FALSE by default.
<code>xlim</code>	Arguments to be passed to the plot method.
<code>ylim</code>	Arguments to be passed to the plot method.
<code>xlab</code>	Arguments to be passed to the plot method.
<code>ylab</code>	Arguments to be passed to the plot method.
<code>ggPlot</code>	ggplot2 object to be plotted upon. Insert an existing plot to add a new PDEPlot to it. Default: empty plot
<code>sampleSize</code>	default(200000), sample size, if <code>datavector</code> is too big
<code>lwd</code>	linewidth, see <code>plot</code>

Value

<code>kernels</code>	numeric vector. The x points of the PDE function.
<code>paretoDensity</code>	numeric vector, the $PDE(x)$.
<code>paretoRadius</code>	numeric value, the Pareto Radius used for the plot.
<code>ggPlot</code>	ggplot2 object. Can be used to further modify the plot or add other plots.

Author(s)

Michael Thrun

References

Ultsch, A.: Pareto Density Estimation: A Density Estimation for Knowledge Discovery, Baier D., Wernecke K.D. (Eds), In Innovations in Classification, Data Science, and Information Systems - Proceedings 27th Annual Conference of the German Classification Society (GfKL) 2003, Berlin, Heidelberg, Springer, pp, 91-100, 2005.

Examples

```
x <- rnorm(1000, mean = 0.5, sd = 0.5)
y <- rnorm(750, mean = -0.5, sd = 0.75)
plt <- PDEplot(x, color = "red")$ggPlot
plt <- PDEplot(y, color = "blue", ggPlot = plt)$ggPlot

# Second Example
# ggplotObj=ggplot()
# for(i in 1:length(Variables))
#   ggplotObj=PDEplot(Data[,i],ggPlot = ggplotObj)$ggPlot
```

PDEscatter

*Scatter Density Plot***Description**

Pareto density estimation (PDE) [Ultsch, 2005] used for a scatter density plot.

Usage

```
PDEscatter(x, y, na.rm = FALSE, paretoRadius = 0, sampleSize =
          round(sqrt(5e+08), -3), NrOfContourLines = 20, Plotter
          = "native", DrawTopView = T, xlab = "X", ylab = "Y",
          main = "PDEscatter", xlim, ylim, Legendlab_ggplot =
          "value")
```

Arguments

x	Numeric vector, first feature (for x axis values)
y	Numeric vector, second feature (for y axis values)
na.rm	Function may not work with non finite values. If these cases should be automatically removed, set parameter TRUE
paretoRadius	Numeric, the Pareto Radius. If omitted (or 0), calculate by paretoRad.
sampleSize	Numeric, maximum size of the sample used for calculation. High values increase runtime significantly.
NrOfContourLines	Numeric, number of contour lines to be drawn. 20 by default.
Plotter	String, name of the plotting backend to use. Possible values are: "native", "ggplot", "plotly"
DrawTopView	Boolean, True means contour is drawn, otherwise a 3D plot is drawn. Default: True

xlab	String, title of the x axis. Default: "X", see plot() function
ylab	String, title of the y axis. Default: "Y", see plot() function
main	string, the same as "main" in plot() function
xlim	see plot() function
ylim	see plot() function
Legendlab_ggplot	String, in case of Plotter="ggplot" label for the legend. Default: "value"

Details

The PDEscatter function generates the density of the xy data as a z coordinate. Afterwards xyz will be plotted either as a contour plot or a 3d plot. This function plots the PDE on top of a scatterplot. Variances of x and y should not differ by extreme numbers, otherwise calculate the percentiles on both first. The method was successfully used in [Thrun, 2018; Thrun/Ultsch 2018].

Value

List of:

AnzInPSpheres	Number of points within the ParetoRadius of each point
ParetoRadius	ParetoRadius used for PDEscatter
Handle	Handle of the plot object. Information-string if native R plot is used.

Note

If DrawTopView=FALSE only the plotly option is currently available. If another option is chosen, the method switches automatically there.

Author(s)

Felix Pape

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, (Ultsch, A. & Huellermeier, E. Eds., 10.1007/978-3-658-20540-9), Doctoral dissertation, Heidelberg, Springer, ISBN: 978-3658205393, 2018.

[Thrun/Ultsch, 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech, S. (eds.), Proc. 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

[Ultsch, 2005] Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, In Baier, D. & Werrnecke, K. D. (Eds.), Innovations in classification, data science, and information systems, (Vol. 27, pp. 91-100), Berlin, Germany, Springer, 2005.

Examples

```
#taken from [Thrun/Ultsch, 2018]
data("ITS")
data("MTY")
Inds=which(ITS<9000&MTY<8000)
plot(ITS[Inds],MTY[Inds],main='Bimodality is not visible in normal scatter plot')

PDEscatter(ITS[Inds],MTY[Inds],xlab = 'ITS in EUR',
ylab = 'MTY in EUR' ,main='Pareto Density Estimation indicates Bimodality' )
```

Piechart

*The pie chart***Description**

the pie chart represents amount of values given in data.

Usage

```
Piechart(Datavector,Names,Labels,MaxNumberOfSlices,
main='',col,Rline=1,...)
```

Arguments

Datavector	[1:n] a vector of n non unique values
Names	Optional, [1:k] names to search for in Datavector, if not set unique of Datavector is calculated.
Labels	Optional, [1:k] Labels if they are specially named, if not Names are used.
MaxNumberOfSlices	Default is k, integer value defining how many labels will be shown. Everything else will be summed up to Other.
main	Optional, title below the fan pie, see plot
col	Optional, default as other colors in this packages, else the same as in plot
Rline	Optional, the radius of the pie in numerical numbers
...	Optional, further arguments passed on to plot

Details

If Number of Slices is higher than MaxNumberOfSlices then ABCanalysis is applied (see [Ultsch/Lotsch, 2015]) and group A chosen. If Number of Slices in group A is higher than MaxNumberOfSlices, then the most important ones out of group A are chosen. If MaxNumberOfSlices is higher than Slices in group A, additional slices are shown depending on the percentage (from high to low). Parameters of visualization a set as in [Schwabish, 2014] defined.

Value

silent output by calling invisible of a list with

Percentages [1:k] percent values visualized in fanplot

Labels [1:k] see input Labels, only relevant ones

Note

You see in the example below that a pie chart does not visualize such data well contrary to the fanPlot.

Author(s)

Michael Thrun

References

[Schwabish, 2014] Schwabish, Jonathan A. An Economist's Guide to Visualizing Data. *Journal of Economic Perspectives*, 28 (1): 209-34. DOI: 10.1257/jep.28.1.209, 2014.

[Ultsch/Lotsch, 2015] Ultsch. A ., Lotsch J.: Computed ABC Analysis for Rational Selection of Most Informative Variables in Multivariate Data, *PloS one*, Vol. 10(6), pp. e0129767. doi 10.1371/journal.pone.0129767, 2015.

Examples

```
data(categoricalVariable)
Piechart(categoricalVariable)
```

Pixelmatrix

Plot of a Pixel Matrix

Description

Plots Data matrix as a pixel colour image.

Usage

```
Pixelmatrix(Data, XNames = NULL, LowLim, HiLim,
YNames = NULL, main = '', FillNotFiniteWithHighestValue=FALSE)
```

Arguments

Data	[1:n,1:d] Data cases in rows (n), variables in columns (d)
LowLim	Optional: limits for the color axis
HiLim	Optional: limits for the color axis
XNames	Optional: Vector - names for the X-ticks
YNames	Optional: Vector - names for the Y-ticks
main	Optional: String - Title of the plot
FillNotFiniteWithHighestValue	Optional, Default FALSE = Non finite values are shown in black, TRUE=non finite values are transformed to a value higher than the highest value and shown in this color

Details

Low values are shown in blue and green, middle values in yellow and high values in orange and red.

Author(s)

Michael Thrun, Felix Pape

Examples

```
data("Lsun3D")
Data=Lsun3D$Data

Pixelmatrix(Data)
```

 Plot3D

3D plot of points

Description

A wrapper for Data with systematic clustering colors for either a 2D (x,y) or 3D (x,y,z) plot combined with a classification

Usage

```
Plot3D(Data,Cls,UniqueColors,size=2,na.rm=FALSE,...)
```

Arguments

Data	[1:n,1:d] matrix with either d=2 or d=3, if d>3 only the first 3 dimensions are taken
Cls	[1:n] numeric vector of the classification of data with k classes
UniqueColors	[1:k] character vector of colors, if not given DataVisualizations::DefaultColorSequence is used
size	size of points
na.rm	if na.rm=TRUE, then missing values are removed
...	further arguments to be processed by <code>plot3d</code> or <code>geom_point</code>

Details

For `geom_point` only size and na.rm is available as further arguments.

Note

Uses either `geom_point` for 2D or `plot3d` for 3D

Author(s)

Michael Thrun

References

RGL vignette in <https://cran.r-project.org/package=rgl>

Spin3D in <https://www.uni-marburg.de/fb12/arbeitsgruppen/datenbionik/software-en>

Examples

```
#Spin3D similar output
data(Lsun3D)
Plot3D(Lsun3D$Data,Lsun3D$Cls,type='s',radius=0.1,box=FALSE,aspect=TRUE)
rgl::grid3d(c("x", "y", "z"))

#Projected Points with Classification
Data=cbind(runif(500,min=-3,max=3),rnorm(500))

# Classification
Cls=ifelse(Data[,1]>0,1,2)
Plot3D(Data,Cls,UniqueColors = DataVisualizations::DefaultColorSequence[c(1,3)],size=2)

#Points with Non-Overlapping Labels
#require(ggrepel)
Data=cbind(runif(30,min=-1,max=1),rnorm(30,0,0.5))
Names=paste0('VeryLongName',1:30)
ggobj=Plot3D(Data)
ggobj + geom_text_repel(aes(label=Names), size=3)
```

PlotMissingvalues *Plot of the Amount Of Missing Values*

Description

Percentage of missing values per feature are visualized as a bar plot.

Usage

```
PlotMissingvalues(Data,Names,  
  
WhichDefineMissing=c('NA','DUMMY','. ',' '),  
  
PlotIt=TRUE,xlab='Amount Of Missing Values in percent',...)
```

Arguments

Data	[1:n,1:d] data cases in rows, variables/features in columns
Names	[1:d] optional vector of string describing the names of the features
WhichDefineMissing	[1:d] optional vector of string describing missing values, usefull for character features.
PlotIt	If FALES: Does not plot
xlab	x label of bar plot
...	Further arguments passed on to barplot, such as main for title

Value

plots not finite and missing values as a bar plot for each feature d and returns with invisible the amount of missing values as a vector. Works even with character variables, but WhichDefineMissing cannot be changed at the current version. Please make a suggestion on GitHub how to improve this.

Note

Does not work with the tibble format, in such a case please call `as.data.frame(as.matrix(Data))`

Author(s)

Michael Thrun

Examples

```
data("ITS")  
data("MTY")  
  
PlotMissingvalues(cbind(ITS,MTY),Names=c('ITS','MTY'))
```

PlotProductratio *Product-Ratio Plot*

Description

The product-ratio plot as defined in [Tukey, 1977, p. 594].

Usage

```
PlotProductratio(x, y, na.rm = FALSE,
  main='Product Ratio Analysis', xlab = "Log of Ratio", ylab = "Root of Product", ...)
```

Arguments

x	[1:n] positive numerical vector, negativ values are removed automatically
y	[1:n] positive numerical vector, negativ values are removed automatically
na.rm	Function may not work with non finite values. If these cases should be automatically removed, set parameter TRUE
main	see plot
ylab	see plot
xlab	see plot
...	further arguments passed on to plot

Details

In the case where there are many instances of very small values, but a small number of very large ones, this plot is usefull [Tukey, 1977, p. 615].

Value

matrix[1:n,2] with $\sqrt{x*y}$ and $\log(x/y)$ as the two columns

Author(s)

Michael Thrun

References

[Tukey, 1977] Tukey, J. W.: Exploratory data analysis, United States Addison-Wesley Publishing Company, ISBN: 0-201-07616-0, 1977.

Examples

```
#Beware: The data does no fit ne requirements for this approach
data('ITS')
data(MTY)
PlotProductratio(ITS,MTY)
```

PmatrixColormap	<i>P-Matrix colors</i>
-----------------	------------------------

Description

Defines the default color sequence for plots made with PDEscatter

Usage

```
data("PmatrixColormap")
```

Format

Returns the vectors for a (heat) colormap.

QQplot	<i>QQplot with a Linear Fit</i>
--------	---------------------------------

Description

Quantile-quantile plot with a linear fit

Usage

```
QQplot(X,Y,xlab ='X', ylab='Y',col="red",main=' ',...)
```

Arguments

X	[1:n] numerical vector, First Feature
Y	1:n] numerical vector, Second Feature to compare first feature with
xlab	x label, see plot ...
ylab	y label, see plot
col	color of line, see plot
main	title of plot, see plot
...	other parameters for qqplot

Details

Output is the evaluation of a linear fit of lm called 'line' and a quantile quantile plot (QQplot).

Value

List with

Residuals	Output of <code>residuals.lm(line)</code>
Summary	Output of <code>summary(line)</code>
Anova	Output of <code>anova(line)</code>

Author(s)

Michael Thrun

References

Michael, J. R.: The stabilized probability plot, *Biometrika*, Vol. 70(1), pp. 11-17, 1983.

Sheparddiagram	<i>Draws a Shepard Diagram</i>
----------------	--------------------------------

Description

This function plots a Shepard diagram which is a scatter plot of InputDist and OutputDist

Usage

```
Sheparddiagram(InputDists, OutputDists, xlab = "Input Distances",
               ylab = "Output Distances", fancy = F,
               main = "ProjectionMethod", gPlot = ggplot())
```

Arguments

InputDists	[1:n,1:n] with n cases of data in d variables/features: Matrix containing the distances of the inputspace.
OutputDists	[1:n,1:n] with n cases of data in d dimensionalites of the projection method variables/features: Matrix containing the distances of the outputspace.
xlab	Label of the x axis in the resulting Plot.
ylab	Label of the y axis in the resulting Plot.
fancy	Set FALSE for PC and TRUE for publication
main	Title of the Shepard diagram
gPlot	ggplot2 object to plot upon.

Value

ggplot2 object containing the plot.

Author(s)

Michael Thrun

Examples

```

data("Lsun3D")
Cls=Lsun3D$Cls
Data=Lsun3D$Data
InputDist=as.matrix(dist(Data))
res = stats::cmdscale(d = InputDist, k = 2, eig = TRUE,
  add = FALSE, x.ret = FALSE)
ProjectedPoints = as.matrix(res$points)

Sheparddiagram(InputDist,as.matrix(dist(ProjectedPoints)),main = 'MDS')

```

ShepardPDEscatter *Shepard PDE scatter*

Description

Draws ein Shepard Diagram (scatterplot of distances) with an two-dimensional PDE density estimation .

Usage

```

ShepardPDEscatter(InputDists, OutputDists, Plotter = "native",
  xlab = "Input Distances", ylab = "Output Distances",
  main = "ProjectionMethod",sampleSize)

```

Arguments

InputDists	[1:n,1:n] with n cases of data in d variables/features: Matrix containing the distances of the inputspace.
OutputDists	[1:n,1:n] with n cases of data in d dimensionalites of the projection method variables/features: Matrix containing the distances of the outputspace.
xlab	Label of the x axis in the resulting Plot.
ylab	Label of the y axis in the resulting Plot.
Plotter	see PDEscatter for details
main	Title of the Shepard diagram
sampleSize	Optional, default(50000), reduces a.ount of data for density estimation, if too many distances given

Details

Introduced and described in [Thrun, 2018, p. 63] with examples in [Thrun, 2018, p. 71-72]

Author(s)

Michael Thrun

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, ISBN: 978-3-658-20540-9, Heidelberg, 2018.

Examples

```
data("Lsun3D")
Cls=Lsun3D$Cls
Data=Lsun3D$Data
InputDist=as.matrix(dist(Data))
res = stats::cmdscale(d = InputDist, k = 2, eig = TRUE,
  add = FALSE, x.ret = FALSE)
ProjectedPoints = as.matrix(res$points)

ShepardPDEscatter(InputDist,as.matrix(dist(ProjectedPoints)),main = 'MDS')
```

SignedLog

Signed Log

Description

Computes the Signed Log if Data

Usage

```
SignedLog(Data,Base="Ten")
```

Arguments

Data	[1:n,1:d] Data matrix with n cases and d variables
Base	Either "Ten", "Two", "Zero", or any number.

Details

A neat transformation for data, if it has a better representation on the log scale.

Value

Transformed Data

Note

Number Selections for Base currently experimental.

Author(s)

Michael Thrun

References

Prof. Dr. habil. A. Ultsch, Lectures in Knowledge Discovery, 2014.

See Also

[log](#)

Examples

```
# sampling is online done
# because otherwise the example takes too long
# in the CRAN check
data('ITS')
ind=sample(length(ITS),1000)

MDplot(SignedLog(cbind(ITS[ind],MTY[ind]))*(-1),Base = "Ten")
```

Silhouetteplot *Silhouette plot of classified data.*

Description

Silhouette plot of cluster silhouettes for the n-by-d data matrix Data or distance matrix where the clusters are defined in the vector Cls.

Usage

```
Silhouetteplot(DataOrDistances, Cls, method='euclidean',
PlotIt=TRUE,...)
```

Arguments

DataOrDistances	[1:n,1:d] data cases in rows, variables in columns, if not symmetric or [1:n,1:n] distance matrix, if symmetric
Cls	numeric vector, [1:n,1] classified data
method	Optional if Datamatrix is used, one of "euclidean", "maximum", "manhattan", "canberra", "binary" or "minkowski". Any unambiguous substring can be given, see dist
PlotIt	Optional, Default:TRUE, FALSE to suppress the plot
...	If PlotIt=TRUE: Further arguments to barplot

Details

"The Silhouette plot is a common unsupervised index for visual evaluation of a clustering [L. R. Kaufman/Rousseeuw, 2005] [introduced in [Rousseeuw, 1987]]. A reasonable clustering is characterized by a silhouette width of greater than 0.5, and an average width below 0.2 should be interpreted as indicating a lack of any substantial cluster structure [Everitt et al., 2001, p. 105]. However, it is evident that silhouette scores assume clusters that are spherical or Gaussian in shape [Herrmann, 2011, pp. 91-92]" [Thrun, 2018, p. 29].

Value

silh Silhouette values in a N-by-1 vector

Author(s)

Onno Hansen-Goos, Michael Thrun

References

[Thrun, 2018] Thrun, M. C.: Projection Based Clustering through Self-Organization and Swarm Intelligence, doctoral dissertation 2017, Springer, ISBN: 978-3-658-20539-3, Heidelberg, 2018.

[Rousseeuw, 1987] Rousseeuw, Peter J.: Silhouettes: a Graphical Aid to the Interpretation and Validation of Cluster Analysis, Computational and Applied Mathematics, 20, p.53-65, 1987.

Examples

```
data("Lsun3D")
Cls=Lsun3D$Cls
Data=Lsun3D$Data
#clear cluster structure
plot(Data[,1:2],col=Cls)
#However, the silhouette plot does not indicate a very good clustering in cluster 1 and 2
Silhouetteplot(Data,Cls = Cls,main='Silhouetteplot')
```

Slopechart

*Slope Chart***Description**

ABC analysis improved slope chart

Usage

```
Slopechart(FirstDatavector,
           SecondDatavector,
           Names,
           Labels,
           MaxNumberOfSlices,
           TopLabels=c('FirstDatavector', 'SecondDatavector'),
           main='Comparision of Descending Frequency')
```

Arguments

FirstDatavector	[1:n] a vector of n non unique values - a features
SecondDatavector	[1:m] a vector of n non unique values - a second feature
Labels	Optional, [1:k] Labels if they are specially named, if not Names are used.
Names	[1:k] names to search for in Datavector, if not set unique of Datavector is calculated.
MaxNumberOfSlices	Default is k, integer value defining how many labels will be shown. Everything else will be summed up to Other.
TopLabels	Labels of of feature names
main	title of the plot

Details

still experimental.

Value

silent output by calling invisible of a list with

Percentages	[1:k] percent values visualized in fanplot
Labels	[1:k] see input Labels, only relevant ones

Author(s)

Michael Thrun

References

[Gohil, 2015] Gohil, Atmajitsinh. R data Visualization cookbook. Packt Publishing Ltd, 2015.

See Also

[Piechart](#), [Fanplot](#)

Examples

```
## will follow
```

StatPDEdensity

Pareto Density Estimation

Description

Density Estimation for ggplot with a clear model behind it.

Format

The format is: Classes 'StatPDEdensity', 'Stat', 'ggproto' <ggproto object: Class StatPDEdensity, Stat> aesthetics: function compute_group: function compute_layer: function compute_panel: function default_aes: uneval extra_params: na.rm finish_layer: function non_missing_aes: parameters: function required_aes: x y retransform: TRUE setup_data: function setup_params: function super: <ggproto object: Class Stat>

Details

PDE was published in [Ultsch, 2005], short explanation in [Thrun, Ultsch 2018] and the PDE optimized violin plot was published in [Thrun et al., 2018].

References

[Ultsch,2005] Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, in Baier, D.; Werrnecke, K. D., (Eds), Innovations in classification, data science, and information systems, Proc Gfkl 2003, pp 91-100, Springer, Berlin, 2005.

[Thrun, Ultsch 2018] Thrun, M. C., & Ultsch, A. : Effects of the payout system of income taxes to municipalities in Germany, in Papiez, M. & Smiech,, S. (eds.), Proc. 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, pp. 533-542, Cracow: Foundation of the Cracow University of Economics, Cracow, Poland, 2018.

[Thrun et al, 2018] Thrun, M. C., Pape, F., & Ultsch, A. : Benchmarking Cluster Analysis Methods using PDE-Optimized Violin Plots, Proc. European Conference on Data Analysis (ECDA), accepted, Paderborn, Germany, 2018.

<code>stat_pde_density</code>	<i>Calculate Pareto density estimation for ggplot2 plots</i>
-------------------------------	--

Description

This function enables to replace the default density estimation for ggplot2 plots with the Pareto density estimation [Utsch, 2005]. It is used for the PDE-Optimized violin plot published in [Thrun et al, 2018].

Usage

```
stat_pde_density(mapping = NULL,
                 data = NULL,
                 geom = "violin",
                 position = "dodge",
                 ...,
                 trim = TRUE,
                 scale = "area",
                 na.rm = FALSE,
                 show.legend = NA,
                 inherit.aes = TRUE)
```

Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply <code>mapping</code> if there is no plot mapping.
<code>data</code>	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data.
<code>geom</code>	The geometric object to use display the data
<code>position</code>	Position adjustment, either as a string, or the result of a call to a position adjustment function.
<code>...</code>	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>color = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired <code>geom/stat</code> .
<code>trim</code>	This parameter only matters if you are displaying multiple densities in one plot. If <code>'FALSE'</code> , the default, each density is computed on the full range of the data. If <code>'TRUE'</code> , each density is computed over the range of that group: this typically means the estimated x values will not line-up, and hence you won't be able to stack density values.

<code>scale</code>	When used with <code>geom_violin</code> : if "area" (default), all violins have the same area (before trimming the tails). If "count", areas are scaled proportionally to the number of observations. If "width", all violins have the same maximum width.
<code>na.rm</code>	If FALSE (the default), removes missing values with a warning. If TRUE silently removes missing values.
<code>show.legend</code>	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
<code>inherit.aes</code>	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Details

Pareto Density Estimation (PDE) is a method for the estimation of probability density functions using hyperspheres. The Pareto-radius of the hyperspheres is derived from the optimization of information for minimal set size. It is shown, that Pareto Density is the best estimate for clusters of Gaussian structure. The method is shown to be robust when cluster overlap and when the variances differ across clusters.

Author(s)

Felix Pape

References

Ultsch, A.: Pareto density estimation: A density estimation for knowledge discovery, in Baier, D.; Werrnecke, K. D., (Eds), Innovations in classification, data science, and information systems, Proc Gfkl 2003, pp 91-100, Springer, Berlin, 2005.

[Thrun et al, 2018] Thrun, M. C., Pape, F., & Ultsch, A. : Benchmarking Cluster Analysis Methods using PDE-Optimized Violin Plots, Proc. European Conference on Data Analysis (ECDA), accepted, Paderborn, Germany, 2018.

See Also

[ggplot2]stat_density

Examples

```

miris <- reshape2::melt(iris)

ggplot2::ggplot(miris,

mapping = ggplot2::aes_string(y = 'value', x = 'variable')) +

ggplot2::geom_violin(stat = "PDEdensity")

```

Worldmap *plots a world map by country codes*

Description

The Worldmap function is used in [Thrun, 2018].

Usage

```
Worldmap(CountryCodes, Cls, Colors,
MissingCountryColor = grDevices::gray(0.8), ...)
```

Arguments

CountryCodes	[1:n] vector of characters identifying countries by ISO 3166 codes (2 or 3 letters)
Cls	[1:n] numerical vector of classification
Colors	optional, vector of characters specifying the used colors
MissingCountryColor	if not all countries are specified in CountryCodes then the color of non relevant countries can be changed here
...	Further arguments passed on to plot, see also <code>sp::SpatialPolygons</code> -class

Value

List of	
Colors	[1:m] colors used in map, $m \leq n$
CountryCodeList	[1:m] countries found, $m \leq n$
world_country_polygons	SpatialPolygonsDataFrame of maptools

Author(s)

Michae Thrun

References

Used in
 [Thrun, 2018] Thrun, M. C. : Cluster Analysis of the World Gross-Domestic Product Based on Emergent Self-Organization of a Swarm, 12th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena, Foundation of the Cracow University of Economics, Zakopane, Poland, accepted, 2018.
 Source for shapefile: - package maptools and
 Originally 'mappinghacks.com/data/TM_WORLD_BORDERS_SIMPL-0.2.zip', now available from <https://github.com/nasa/World-Wind-Java/tree/master/WorldWind/testData/shapefiles>

Examples

```
# data from [Thrun, 2018]
Cls=c(1L, 1L, 2L, 2L, 2L, 2L, 2L, 1L, 2L, 1L, 1L, 1L, 2L, 2L, 2L,
2L, 2L, 1L, 2L, 2L, 2L, 1L, 2L, 1L, 2L, 1L, 2L, 2L, 1L, 1L, 1L,
1L, 2L, 1L, 1L, 2L, 2L, 2L, 1L, 2L, 2L, 2L, 2L, 2L, 1L, 2L, 1L,
2L, 2L, 2L, 1L, 2L, 2L, 2L, 1L, 1L, 1L, 1L, 3L, 2L, 2L, 2L, 1L,
2L, 1L, 1L, 2L, 1L, 1L, 2L, 2L, 2L, 2L, 2L, 2L, 2L, 2L, 2L, 1L,
1L, 2L, 2L, 2L, 1L, 2L, 1L, 2L, 1L, 1L, 2L, 2L, 1L, 1L, 1L, 2L,
2L, 1L, 2L, 1L, 1L, 1L, 2L, 1L, 2L, 2L, 1L, 1L, 1L, 2L, 2L, 1L,
2L, 2L, 1L, 2L, 2L, 1L, 2L, 1L, 2L, 2L, 2L, 1L, 2L, 1L, 1L, 1L,
2L, 1L, 1L, 2L, 1L, 1L, 2L, 2L, 1L, 2L, 1L, 1L, 1L, 2L, 2L, 2L,
2L, 2L, 2L, 1L, 1L, 2L, 2L, 2L, 2L, 1L, 2L, 2L, 2L, 1L, 1L, 1L)
)
Codes=c("AFG", "AGO", "ALB", "ARG", "ATG", "AUS", "AUT", "BDI", "BEL",
"BEN", "BFA", "BGD", "BGR", "BHR", "BHS", "BLZ", "BMU", "BOL",
"BRA", "BRB", "BRN", "BTN", "BWA", "CAF", "CAN", "CH2", "CHE",
"CHL", "CHN", "CIV", "CMR", "COG", "COL", "COM", "CPV", "CRI",
"CUB", "CYP", "DJI", "DMA", "DNK", "DOM", "DZA", "ECU", "EGY",
"ESP", "ETH", "FIN", "FJI", "FRA", "FSM", "GAB", "GBR", "GER",
"GHA", "GIN", "GMB", "GNB", "GNQ", "GRC", "GRD", "GTM", "GUY",
"HKG", "HND", "HTI", "HUN", "IDN", "IND", "IRL", "IRN", "IRQ",
"ISL", "ISR", "ITA", "JAM", "JOR", "JPN", "KEN", "KHM", "KIR",
"KNA", "KOR", "LAO", "LBN", "LBR", "LCA", "LKA", "LSO", "LUX",
"MAC", "MAR", "MDG", "MDV", "MEX", "MHL", "MLI", "MLT", "MNG",
"MOZ", "MRT", "MUS", "MWI", "MYS", "NAM", "NER", "NGA", "NIC",
"NLD", "NOR", "NPL", "NZL", "OMN", "PAK", "PAN", "PER", "PHL",
"PLW", "PNG", "POL", "PRI", "PRT", "PRY", "ROM", "RWA", "SDN",
"SEN", "SGP", "SLB", "SLE", "SLV", "SOM", "STP", "SUR", "SWE",
"SWZ", "SYC", "SYR", "TCD", "TGO", "THA", "TON", "TTO", "TUN",
"TUR", "TWN", "TZA", "UGA", "URY", "USA", "VCT", "VEN", "VNM",
"VUT", "WSM", "ZAF", "ZAR", "ZMB", "ZWE")
Worldmap(Codes,Cls)
```

world_country_polygons

world_country_polygons

Description

world_country_polygons shaoefile

Usage

data("world_country_polygons")

Format

The format is: Formal class 'SpatialPolygonsDataFrame' [package "sp"] with 5 slots ..@ data : 'data.frame': 246 obs. of 11 variables: ...\$ FIPS : Factor w/ 244 levels "", "AC", "AE", "AF", ...: 2 5

```

6 7 8 10 11 12 13 17 ... ..$ ISO2 : Factor w/ 246 levels "AD","AE","AF",...: 4 61 17 6 7 9 12 11
14 24 ... ..$ ISO3 : Factor w/ 246 levels "ABW","AFG","AGO",...: 15 64 18 6 11 3 12 10 16 25 ...
...$ UN : int [1:246] 28 12 31 8 51 24 16 32 36 48 ... ..$ NAME : Factor w/ 246 levels "Aaland
Islands",...: 10 4 16 3 12 7 5 11 14 18 ... ..$ AREA : int [1:246] 44 238174 8260 2740 2820
124670 20 273669 768230 71 ... ..$ POP2005 : num [1:246] 83039 32854159 8352021 3153731
3017661 ... ..$ REGION : int [1:246] 19 2 142 150 142 2 9 19 9 142 ... ..$ SUBREGION: int
[1:246] 29 15 145 39 145 17 61 5 53 145 ... ..$ LON : num [1:246] -61.78 2.63 47.4 20.07 44.56
... ..$ LAT : num [1:246] 17.1 28.2 40.4 41.1 40.5 ... ..@ polygons :List of 246 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 2 .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -61.8 17.1 .. .. .. ..
..@ area : num 0.00957 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] -61.7 -61.9 -61.8 -61.7 17 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -61.8 17.6 .. .. .. ..@ area :
num 0.00774 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] -61.7 -61.9 -61.9 -61.7 17.6 ... .. .. ..@ plotOrder: int [1:2] 1 2 .. .. ..@
labpt : num [1:2] -61.8 17.1 .. .. .. ..@ ID : chr "ATG" .. .. .. ..@ area : num 0.0173 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 1 .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 2.63 28.17 .. .. .. ..
..@ area : num 214 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 2.96 4.79 5.33 6.4 8.62 ... .. .. ..@ plotOrder: int 1 .. .. .. ..@
labpt : num [1:2] 2.63 28.17 .. .. .. ..@ ID : chr "DZA" .. .. .. ..@ area : num 214 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 5 .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 47.7 40.3 .. .. .. ..@
area : num 8.49 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:2, 1:2] 46.6 47.8 48.6 49.5 50.4 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 45.5 39.4 .. .. .. ..@ area : num 0.506 ..
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:7, 1:2] 45.1 45.8 46.2 45 44.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] 45.5 40.6 .. .. .. ..@ area : num 0.00169 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 45.5 45.5
45.6 45.5 40.6 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] 45 41.1 .. .. .. ..@ area : num 0.000995 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 45 45 45 45 41 ... .. .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 45.2 41
.. .. .. ..@ area : num 0.00036 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 45.2 45.2 45.2 45.2 41 ... .. .. ..@ plotOrder: int
[1:5] 1 2 3 4 5 .. .. .. ..@ labpt : num [1:2] 47.7 40.3 .. .. .. ..@ ID : chr "AZE" .. .. .. ..@ area :
num 9 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 1 .. ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 20.1
41.1 .. .. .. ..@ area : num 2.89 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:15, 1:2] 19.4 19.6 19.4 19.6 20.1 ... .. .. ..@ plotOrder:
int 1 .. .. .. ..@ labpt : num [1:2] 20.1 41.1 .. .. .. ..@ ID : chr "ALB" .. .. .. ..@ area : num 2.89 ..
..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 4 .. .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 45 40.3 .. ..
.. ..@ area : num 3.21 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:15, 1:2] 45.2 46 45.6 46.5 46.5 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 45.5 40.6 .. .. .. ..@ area : num
0.00169 .. .. .. ..@ hole : logi TRUE .. .. .. ..@ ringDir: int -1 .. .. .. ..@ coords :

```

```

num [1:4, 1:2] 45.6 45.5 45.5 45.6 40.6 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] 45 41.1 .. ..@ area : num 0.000995 .. ..
..@ hole : logi TRUE .. ..@ ringDir: int -1 .. ..@ coords : num [1:4, 1:2] 45 45
45 45 41 .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] 45.2 41 .. ..@ area : num 0.00036 .. ..@ hole : logi TRUE .. ..
..@ ringDir: int -1 .. ..@ coords : num [1:4, 1:2] 45.2 45.2 45.2 45.2 41 .. ..@
plotOrder: int [1:4] 1 2 3 4 .. ..@ labpt : num [1:2] 45 40.3 .. ..@ ID : chr "ARM" .. ..
..@ area : num 3.21 .. ..$. :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons
:List of 3 .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] 17.6 -12.4 .. ..@ area : num 104 .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. ..@ coords : num [1:35, 1:2] 14 16.6 16.9 17.6 19.4 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 12.47 -5.06
.. ..@ area : num 0.616 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:8, 1:2] 13.1 12.6 12.5 12.2 12 .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 11.7 -16.7 .. ..@
area : num 0.00124 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] 11.8 11.7 11.8 11.8 -16.8 .. ..@ plotOrder: int [1:3] 1 2 3 .. ..
..@ labpt : num [1:2] 17.6 -12.4 .. ..@ ID : chr "AGO" .. ..@ area : num 104 .. ..$. :Formal
class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 5 .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -169.5 -14.3 .. ..
..@ area : num 0.00168 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -169.4 -169.5 -169.5 -169.4 -14.3 .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -170.7 -14.3 .. ..
..@ area : num 0.000856 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -170.6 -170.8 -170.6 -170.6 -14.3 .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -169.7 -14.2 .. ..
..@ area : num 0.00033 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -169.7 -169.7 -169.7 -169.7 -14.2 .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -169.6 -14.2 .. ..
..@ area : num 0.000227 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -169.6 -169.6 -169.6 -169.6 -14.2 .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -170.5 -14.3 .. ..
..@ area : num 0.000137 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -170.5 -170.6 -170.5 -170.5 -14.3 .. ..@ plotOrder: int
[1:5] 1 2 3 4 5 .. ..@ labpt : num [1:2] -169.5 -14.3 .. ..@ ID : chr "ASM" .. ..@ area
: num 0.00323 .. ..$. :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List
of 6 .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] -65.2 -35.2 .. ..@ area : num 275 .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. ..@ coords : num [1:119, 1:2] -65.7 -65.2 -64.6 -64.3 -63.9 .. ..
..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -67.4
-54.4 .. ..@ area : num 3.13 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:9, 1:2] -68.3 -68.5 -67.4 -65.1 -65.4 .. ..$. :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -64.4 -54.8 .. ..
..@ area : num 0.038 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -63.8 -64.7 -64.8 -63.8 -54.7 .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -62 -39.2 .. ..@ area : num
0.0103 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords :
num [1:4, 1:2] -61.9 -62.1 -61.9 -61.9 -39.2 .. ..$. :Formal class 'Polygon' [package "sp"]

```

```

with 5 slots ... ..@ labpt : num [1:2] -62 -39 ... ..@ area : num 0.00309 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
-62 -62.1 -62 -62 -39.1 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -68.6 -54.9 ... ..@ area : num 0.00146 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -68.6 -68.6 -68.6
-68.6 -54.9 ... ..@ plotOrder: int [1:6] 1 2 3 4 5 6 ... ..@ labpt : num [1:2] -65.2 -35.2 ..
... ..@ ID : chr "ARG" ... ..@ area : num 278 ... ..$. :Formal class 'Polygons' [package "sp"] with
5 slots .. ..@ Polygons :List of 97 .. ..$. :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] 134.4 -25.6 ... ..@ area : num 688 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:209, 1:2] 143
143 144 145 145 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 147 -42 ... ..@ area : num 6.66 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:17, 1:2] 145 147 148 148 148 ...
... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
131 -11.5 ... ..@ area : num 0.403 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:6, 1:2] 131 131 132 131 130 ... ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 137.4 -35.8 ... ..
... ..@ area : num 0.184 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 137.6 138.1 136.5 137.6 -35.7 ... ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] 136.7 -14.1 ... ..@ area :
num 0.11 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords :
num [1:6, 1:2] 137 137 137 137 136 ... ..$. :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] 153.1 -25.4 ... ..@ area : num 0.0983 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 153.1
152.9 153.3 153.1 -25.8 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 130.3 -11.6 ... ..@ area : num 0.0934 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 130.5 130 130.3
130.5 -11.7 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 148 -40 ... ..@ area : num 0.0687 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 148.2 147.9 148.3 148.2 -40.3 ...
... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
139.4 -16.6 ... ..@ area : num 0.0657 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 139.7 139.1 139.3 139.7 -16.5 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 144 -39.9 ..
... ..@ area : num 0.0495 ... ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
... ..@ coords : num [1:4, 1:2] 144 144 144.1 144 -40.1 ... ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] 113 -25.8 ... ..@ area : num
0.0378 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords :
num [1:4, 1:2] 113.2 113 113 113.2 -26.1 ... ..$. :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] 148.3 -40.4 ... ..@ area : num 0.0295 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num
[1:4, 1:2] 148.4 148.5 148 148.4 -40.3 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] 151.2 -23.6 ... ..@ area : num 0.0206 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
151.3 151 151.2 151.3 -23.8 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 147.3 -43.4 ... ..@ area : num 0.0172 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 147.4
147.1 147.3 147.4 -43.4 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..

```

```

.. ..@ labpt : num [1:2] 153.5 -27.5 .. .. .. ..@ area : num 0.0164 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 153.5 153.4
153.5 153.5 -27.7 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 146.2 -18.4 .. .. .. ..@ area : num 0.0161 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 146.3 146.1 146.3
146.3 -18.5 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 124.5 -15.4 .. .. .. ..@ area : num 0.0153 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:5, 1:2] 125 125 124 125 125 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
136.7 -11.2 ... .. .. ..@ area : num 0.0119 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 136.5 136.8 136.7 136.5 -11.5 ... .. .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 137 -15.7 ..
.. .. .. ..@ area : num 0.0116 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 137.1 136.9 137 137.1 -15.8 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 145.3 -38.5 .. .. ..
.. .. ..@ area : num 0.0116 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] 145.3 145.4 145.1 145.3 -38.5 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 132.6 -11.1 .. .. .. ..
..@ area : num 0.0112 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] 132.6 132.5 132.6 132.6 -11.3 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 148.1 -42.7 .. .. .. ..@ area :
num 0.0102 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] 148.2 148 148 148.2 -42.7 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 136.2 -13.7 .. .. .. ..@ area : num 0.0101
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 136.3 136.1 136.2 136.3 -13.7 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 115.4 -20.8 .. .. .. ..@ area : num 0.0096 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
115.5 115.3 115.4 115.5 -20.8 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] 147.4 -43.2 .. .. .. ..@ area : num 0.00929 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 147.4
147.3 147.4 147.4 -43.3 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 139.5 -17.1 .. .. .. ..@ area : num 0.00862 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 139.6 139.4
139.5 139.6 -17.1 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 145.4 -38.3 .. .. .. ..@ area : num 0.00755 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 145.5 145.3 145.3
145.5 -38.4 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 142.2 -10.7 .. .. .. ..@ area : num 0.00748 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 142.3 142.2 142.1 142.3 -10.7
... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 136.4 -11.6 .. .. .. ..@ area : num 0.00705 .. .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 136.5 136.2 136.5 136.5 -11.5 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
125.1 -14.6 .. .. .. ..@ area : num 0.00597 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 125.1 125.1 125.2 125.1 -14.6 ... .. ..
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 142.3
-10.2 .. .. .. ..@ area : num 0.00544 .. .. .. ..@ hole : logi FALSE .. .. .. ..@

```


ringDir: int 1@ coords : num [1:4, 1:2] 142.3 142.2 142.3 142.3 -10.3\$.
:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 148.2 -40.5
.. .. .@ area : num 0.00522@ hole : logi FALSE@ ringDir:
int 1@ coords : num [1:4, 1:2] 148.2 148.1 148.2 148.2 -40.6\$. :Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 132.6 -11.7
.. .. .@ area : num 0.00511@ hole : logi FALSE@ ringDir: int 1 ..
.. .. .@ coords : num [1:4, 1:2] 132.6 132.5 132.6 132.6 -11.7\$. :Formal class
'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 150.5 -22.3
.. .. .@ area : num 0.0049@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] 150.5 150.5 150.6 150.5 -22.4\$. :Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] 145 -40.7@ area : num
0.00484@ hole : logi FALSE@ ringDir: int 1@ coords :
num [1:4, 1:2] 144.9 144.9 145 144.9 -40.7\$. :Formal class 'Polygon' [package "sp"]
with 5 slots@ labpt : num [1:2] 144.8 -40.5@ area : num 0.00469
.. .. .@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4,
1:2] 144.8 144.7 144.8 144.8 -40.6\$. :Formal class 'Polygon' [package "sp"] with 5
slots@ labpt : num [1:2] 158.9 -54.6@ area : num 0.00434
.. .. .@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 158.9
158.8 159 158.9 -54.7\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] 142.1 -10.1@ area : num 0.0043@ hole : logi
FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 142.2 142.1 142.1
142.2 -10.2\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] 148.9 -20.1@ area : num 0.00404@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 148.9 148.9 149 148.9 -20.2 ...
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
144.9 -40.4@ area : num 0.00402@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] 144.9 144.8 144.9 144.9 -40.5\$.
:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 136.8 -15.7
.. .. .@ area : num 0.00391@ hole : logi FALSE@ ringDir:
int 1@ coords : num [1:4, 1:2] 136.7 136.7 136.8 136.7 -15.8\$. :Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 136.6 -15.6
.. .. .@ area : num 0.00383@ hole : logi FALSE@ ringDir: int 1 ..
.. .. .@ coords : num [1:4, 1:2] 136.5 136.6 136.6 136.5 -15.6\$. :Formal class
'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 149 -20.3@
area : num 0.00374@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] 149 149 149 149 -20.3\$. :Formal class 'Polygon' [package
"sp"] with 5 slots@ labpt : num [1:2] 128 -15@ area : num 0.00373 ..
.. .. .@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4,
1:2] 128 128 128 128 -15\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] 128.1 -15.1@ area : num 0.0036@ hole
: logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 128.2 128.1
128.1 128.2 -15.2\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] 136.7 -15.7@ area : num 0.00357@ hole : logi
FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 136.7 136.6 136.7
136.7 -15.8\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] 146.6 -38.8@ area : num 0.00352@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 146.7 146.5 146.5 146.7 -38.8 ...
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]

```

153.4 -27.2 ... ..@ area : num 0.00343 ... ..@ hole : logi FALSE ... ..
..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 153.4 153.5 153.4 -27.2 ... ..
...$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 149.9
-22.1 ... ..@ area : num 0.00338 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 149.9 149.9 149.9 -22.2 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 133.4 -11.6
... ..@ area : num 0.00328 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 133.4 133.4 133.5 133.4 -11.7 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 136 -12 ... ..
..@ area : num 0.00318 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
...@ coords : num [1:4, 1:2] 136 136 136 136 -12 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] 133.5 -11.5 ... ..@ area : num 0.00318
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num
[1:4, 1:2] 133.5 133.4 133.5 133.5 -11.5 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] 124.4 -15.3 ... ..@ area : num 0.00305 ... ..
...@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
124.4 124.3 124.4 124.4 -15.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 146.8 -19.1 ... ..@ area : num 0.00271 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 146.9
146.8 146.9 146.9 -19.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 136 -35 ... ..@ area : num 0.00248 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 136.2 136.1 136.2
136.2 -35.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] 129.6 -14.9 ... ..@ area : num 0.00239 ... ..@ hole : logi FALSE ...
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129.6 129.6 129.5 129.6 -14.9 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
133.6 -32.3 ... ..@ area : num 0.00229 ... ..@ hole : logi FALSE ... ..
..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 133.6 133.5 133.7 133.6 -32.3 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 136 -11.7
... ..@ area : num 0.00228 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 136 136 136.1 136 -11.7 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 135.7 -14.9 ... ..
..@ area : num 0.00228 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
...@ coords : num [1:4, 1:2] 135.8 135.7 135.7 135.8 -14.9 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 125 -15 ... ..@ area : num
0.00218 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] 125 125 125 125 -15 ... ..$ :Formal class 'Polygon' [package "sp"] with 5
slots ... ..@ labpt : num [1:2] 132.4 -12.1 ... ..@ area : num 0.00215 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 132.4
132.3 132.4 132.4 -12.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 134.5 -33.7 ... ..@ area : num 0.00203 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 134.5 134.5
134.5 134.5 -33.8 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 148.3 -42.3 ... ..@ area : num 0.00195 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 148.3 148.2 148.3
148.3 -42.4 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] 142.3 -10.6 ... ..@ area : num 0.00186 ... ..@ hole : logi FALSE ...
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 142.3 142.2 142.3 142.3 -10.6 ...

```

```
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
113.1 -24.9 .. .. .. ..@ area : num 0.0018 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 113.1 113.1 113.1 113.1 -24.9 ... .. ..
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 136.9
-15.6 .. .. .. ..@ area : num 0.00177 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 136.9 136.8 136.9 136.9 -15.6 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 126.5 -13.9
.. .. .. ..@ area : num 0.00156 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 126.6 126.5 126.5 126.6 -13.9 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 134.9 -12.1 .. .. ..
.. ..@ area : num 0.00152 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] 134.9 134.9 134.9 134.9 -12.1 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 151.3 -23.8 .. .. ..
..@ area : num 0.00143 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 151.4 151.3 151.3 151.4 -23.9 ... .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 135 -12 .. .. .. ..@ area : num
0.00126 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] 135 135 135 135 -12 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] 150.3 -21.8 .. .. .. ..@ area : num 0.00124 .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 150.3
150.3 150.4 150.3 -21.8 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 159.1 -31.6 .. .. .. ..@ area : num 0.00119 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 159.1 159.1
159.1 159.1 -31.5 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
..@ labpt : num [1:2] 136.6 -11.8 .. .. .. ..@ area : num 0.00116 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 136.6 136.5 136.6
136.6 -11.8 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 147.3 -39.5 .. .. .. ..@ area : num 0.00113 .. .. .. ..@ hole : logi FALSE ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 147.4 147.3 147.3 147.4 -39.5 ...
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
149.7 -22.4 .. .. .. ..@ area : num 0.0011 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 149.7 149.7 149.8 149.7 -22.4 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 139.1 -16.8
.. .. .. ..@ area : num 0.00105 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 139.1 139.1 139.1 139.1 -16.9 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 124.8 -15.3 .. .. ..
.. ..@ area : num 0.00102 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] 124.8 124.8 124.8 124.8 -15.3 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 135.1 -11.9 .. .. ..
..@ area : num 0.000989 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 135.1 135 135.1 135.1 -11.9 ... .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 136.5 -11.9 .. .. .. ..@ area :
num 0.000979 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] 136.5 136.5 136.5 136.5 -11.9 ... .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 150.3 -21.7 .. .. .. ..@ area :
num 0.000907 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] 150.3 150.3 150.3 150.3 -21.7 ... .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 136.5 -35.2 .. .. .. ..@ area :
```

```

num 0.000873 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 136.5 136.4 136.5 136.5 -35.2 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 142.2 -10.6 .. .. .. ..@ area :
num 0.000854 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 142.2 142.2 142.2 142.2 -10.6 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 148 -20 .. .. .. ..@ area : num
0.000845 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] 148 148 148 148 -20 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] 137.4 -34.5 .. .. .. ..@ area : num 0.000833 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
137.4 137.3 137.4 137.4 -34.5 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] 115.7 -32.2 .. .. .. ..@ area : num 0.000823 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 115.7
115.7 115.6 115.7 -32.2 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 136.8 -12.1 .. .. .. ..@ area : num 0.000812 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 136.8
136.8 136.8 136.8 -12.1 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 151 -23.2 .. .. .. ..@ area : num 0.000787 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 151 150.9 151
151 -23.2 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 129.6 -14.8 .. .. .. ..@ area : num 0.00074 .. .. .. ..@ hole : logi FALSE .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 129.6 129.6 129.6 129.6 -14.9 ...
.. .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
149.1 -20.5 .. .. .. ..@ area : num 0.000695 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 149.1 149 149.1 149.1 -20.5 ... .. ..
.. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 123.2
-34.1 .. .. .. ..@ area : num 0.000586 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 123.2 123.2 123.2 123.2 -34.1 ... .. .. ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 118.5 -34.9
.. .. .. ..@ area : num 0.000547 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 118.5 118.4 118.5 118.5 -34.9 ... .. .. ..$. :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 153 -25.3 .. .. ..
..@ area : num 0.000506 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 153 152.9 153 153 -25.3 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 136.1 -13.5 .. .. .. ..@ area :
num 0.000501 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 136.2 136.2 136.1 136.2 -13.5 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 142.3 -10.5 .. .. .. ..@ area :
num 0.000479 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 142.3 142.3 142.3 142.3 -10.5 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 147.3 -39.5 .. .. .. ..@ area :
num 0.000435 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 147.3 147.3 147.3 147.3 -39.5 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 122.2 -34.1 .. .. .. ..@ area :
num 0.000401 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 122.2 122.2 122.3 122.2 -34.2 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 113.1 -25.2 .. .. .. ..@ area :
num 0.000184 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@

```

```
coords : num [1:4, 1:2] 113.1 113.1 113.1 113.1 -25.2 ... ..@ plotOrder: int [1:97] 1 2 3 4 5 6
7 8 9 10 ... ..@ labpt : num [1:2] 134.4 -25.6 ... ..@ ID : chr "AUS" ... ..@ area : num
696 ... ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..@ Polygons :List of 6 ... ..
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 50.5 26
... ..@ area : num 0.0205 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 50.5 50.6 50.5 50.5 26.2 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 50.8 25.7 ... ..
..@ area : num 0.00287 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 50.8 50.7 50.8 50.8 25.6 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 50.6 26.3 ... ..@ area : num
0.00075 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords :
num [1:4, 1:2] 50.7 50.6 50.6 50.7 26.2 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] 50.8 25.7 ... ..@ area : num 0.000224 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
50.8 50.8 50.8 50.8 25.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] 50.8 25.7 ... ..@ area : num 4.56e-05 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 50.8 50.8 50.8
50.8 25.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] 50.8 25.8 ... ..@ area : num 2.73e-05 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 50.8 50.8 50.8 50.8 25.7 ... ..
..@ plotOrder: int [1:6] 1 2 3 4 5 6 ... ..@ labpt : num [1:2] 50.5 26 ... ..@ ID : chr "BHR"
... ..@ area : num 0.0244 ... ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..@
Polygons :List of 1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] -59.5 13.2 ... ..@ area : num 0.0208 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -59.5 -59.6 -59.4 -59.5 13.1
... ..@ plotOrder: int 1 ... ..@ labpt : num [1:2] -59.5 13.2 ... ..@ ID : chr "BRB"
... ..@ area : num 0.0208 ... ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..@
Polygons :List of 3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] -64.8 32.3 ... ..@ area : num 0.00389 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -64.8 -64.9 -64.7 -64.8 32.3
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-64.9 32.3 ... ..@ area : num 0.000459 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -64.9 -64.9 -64.8 -64.9 32.3 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -64.7 32.4 ..
... ..@ area : num 0.000332 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] -64.6 -64.7 -64.7 -64.6 32.4 ... ..@ plotOrder:
int [1:3] 1 2 3 ... ..@ labpt : num [1:2] -64.8 32.3 ... ..@ ID : chr "BMU" ... ..@ area :
num 0.00468 ... ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..@ Polygons :List
of 28 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] -78 24.6 ... ..@ area : num 0.253 ... ..@ hole : logi FALSE ... ..
..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] -78.2 -77.7 -78 -78.4 -78.2 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -77.3 26.4 ..
... ..@ area : num 0.157 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:7, 1:2] -77.7 -77 -77.2 -77.4 -77.1 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -78.5 26.6 ... ..@
area : num 0.116 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@
coords : num [1:4, 1:2] -77.9 -78.7 -79 -77.9 26.7 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] -77.7 24 ... ..@ area : num 0.0711 ... ..
```

```

... ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:6,
1:2] -77.7 -77.6 -77.6 -77.9 -77.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -75.5 24.3 .. ..@ area : num 0.0639 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -75.3
-75.5 -75.7 -75.3 24.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -73.2 21.1 .. ..@ area : num 0.0613 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -73 -73.7 -73 -73
21.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] -74 22.5 .. ..@ area : num 0.0496 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -73.8 -73.9 -74.3 -73.8 22.7 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -76.4 25.2
.. ..@ area : num 0.0354 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:9, 1:2] -76.5 -76.3 -76.1 -76.2 -76.2 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -75.1 23.2 .. ..
.. ..@ area : num 0.0184 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -75 -75.3 -74.8 -75 23.1 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -72.9 22.3 .. ..@ area : num
0.0167 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:4, 1:2] -72.8 -72.8 -73.2 -72.8 22.4 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] -74.1 22.7 .. ..@ area : num 0.012 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
-74.1 -74.3 -74 -74.1 22.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -75.9 23.6 .. ..@ area : num 0.00614 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -75.8 -76 -76
-75.8 23.5 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] -74.5 24.1 .. ..@ area : num 0.00561 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.5 -74.5 -74.5 -74.5 24 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -73 21.5
.. ..@ area : num 0.00484 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] -72.9 -73 -73.1 -72.9 21.5 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -77.9 24.2 .. ..
.. ..@ area : num 0.00448 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -77.9 -78 -77.8 -77.9 24.1 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -77.4 25 .. ..@ area : num
0.00432 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:4, 1:2] -77.4 -77.6 -77.3 -77.4 25 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] -74.9 23.7 .. ..@ area : num 0.00373 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4,
1:2] -74.8 -74.8 -74.9 -74.8 23.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. ..@ labpt : num [1:2] -78 24.3 .. ..@ area : num 0.00229 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -77.9
-78 -77.9 -77.9 24.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -77.7 24.3 .. ..@ area : num 0.00209 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -77.7 -77.8 -77.7
-77.7 24.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] -74.3 22.6 .. ..@ area : num 0.00194 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.4 -74.4 -74.3 -74.4 22.5 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]

```

```
-73.7 23.1 ... ..@ area : num 0.00162 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -73.7 -73.8 -73.7 -73.7 23.1 ... ..@$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -76.5 24.2 ..
... ..@ area : num 0.0011 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -76.5 -76.5 -76.5 -76.5 24.2 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -77.6 26.3 ... ..@
area : num 0.00105 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -77.6 -77.6 -77.5 -77.6 26.3 ... ..@$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -75.6 23.4 ... ..@ area : num
0.00102 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -75.6 -75.5 -75.7 -75.6 23.4 ... ..@$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -77.9 25.8 ... ..@ area : num 0.000989 ...
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] -77.8 -77.9 -77.9 -77.8 25.7 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -76.4 24.1 ... ..@ area : num 0.000845 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -76.4
-76.3 -76.4 -76.4 24.1 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -73.5 22.6 ... ..@ area : num 0.000571 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -73.5 -73.6 -73.5
-73.5 22.6 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -73.6 22.6 ... ..@ area : num 0.000299 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -73.6 -73.6 -73.6 -73.6 22.6
... ..@ plotOrder: int [1:28] 1 2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] -78 24.6 ..
... ..@ ID : chr "BHS" ... ..@ area : num 0.897 ... ..@$ :Formal class 'Polygons' [package "sp"]
with 5 slots ... ..@ Polygons :List of 35 ... ..@$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] 90.3 23.9 ... ..@ area : num 11.5 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:45, 1:2] 88.4
89.3 89.7 89.8 92.4 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
..@ labpt : num [1:2] 90.7 22.4 ... ..@ area : num 0.11 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:8, 1:2] 90.8 90.6 90.7 90.6 90.6 ...
... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
91.1 22.3 ... ..@ area : num 0.0278 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 91 91.1 91.2 91 22.1 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 91.9 21.6 ... ..
..@ area : num 0.013 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] 91.9 91.9 92 91.9 21.5 ... ..@$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] 90.6 22.8 ... ..@ area : num 0.0107 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5,
1:2] 90.5 90.5 90.7 90.5 90.5 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 91.5 22.5 ... ..@ area : num 0.0107 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 91.5 91.4
91.4 91.5 22.3 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] 90.6 23 ... ..@ area : num 0.0094 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] 90.7 90.6 90.7 90.5 90.6 ...
... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
90.5 22.1 ... ..@ area : num 0.00706 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 90.5 90.5 90.6 90.5 22 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 90.2 22.1 ... ..
```

```

...@ area : num 0.00473 ...@ hole : logi TRUE ...@ ringDir: int -1 ...
...@ coords : num [1:4, 1:2] 90.2 90.1 90.2 90.2 22.2 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ...@ labpt : num [1:2] 90.4 22 ...@ area : num
0.00466 ...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords :
num [1:4, 1:2] 90.4 90.4 90.5 90.4 21.9 ...$ :Formal class 'Polygon' [package "sp"] with
5 slots ...@ labpt : num [1:2] 91.9 21.8 ...@ area : num 0.00369 ...
..@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 91.8
91.9 91.9 91.8 21.7 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...
...@ labpt : num [1:2] 89.1 21.8 ...@ area : num 0.0033 ...@ hole : logi
FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 89.1 89.1 89.1 89.1
21.7 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num
[1:2] 90.5 21.9 ...@ area : num 0.0028 ...@ hole : logi FALSE ...
..@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 90.5 90.5 90.6 90.5 21.9 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 90.6 22.4 ..
...@ area : num 0.00216 ...@ hole : logi FALSE ...@ ringDir:
int 1 ...@ coords : num [1:4, 1:2] 90.7 90.6 90.6 90.7 22.4 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 91 22.3 ...@
area : num 0.00179 ...@ hole : logi FALSE ...@ ringDir: int 1 ...
...@ coords : num [1:4, 1:2] 90.9 91 91 90.9 22.2 ...$ :Formal class 'Polygon' [package
"sp"] with 5 slots ...@ labpt : num [1:2] 90.5 23.3 ...@ area : num 0.0015 ..
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4,
1:2] 90.5 90.6 90.4 90.5 23.3 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...
...@ labpt : num [1:2] 90.9 22.2 ...@ area : num 0.00124 ...@ hole :
logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 90.9 90.9 91
90.9 22.1 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt :
num [1:2] 90.5 23 ...@ area : num 0.00124 ...@ hole : logi FALSE ...
...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 90.5 90.5 90.5 90.5 23 ...
..$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 91.2 22.4
...@ area : num 0.00103 ...@ hole : logi FALSE ...@ ringDir:
int 1 ...@ coords : num [1:4, 1:2] 91.2 91.2 91.2 91.2 22.4 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 91 22.2 ...@
area : num 0.000695 ...@ hole : logi FALSE ...@ ringDir: int 1 ...
..@ coords : num [1:4, 1:2] 91 91 91 91 22.2 ...$ :Formal class 'Polygon' [package "sp"]
with 5 slots ...@ labpt : num [1:2] 90.6 21.9 ...@ area : num 0.000526 ..
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4,
1:2] 90.6 90.6 90.7 90.6 21.9 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...
...@ labpt : num [1:2] 90.4 22 ...@ area : num 0.000525 ...@ hole :
logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 90.4 90.3 90.4
90.4 22 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt :
num [1:2] 91 22.4 ...@ area : num 0.00052 ...@ hole : logi FALSE ...
...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] 91 91 91 91 22.4 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 91 22.4 ..
...@ area : num 0.00046 ...@ hole : logi FALSE ...@ ringDir: int
1 ...@ coords : num [1:4, 1:2] 91 91 91 91 22.4 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ...@ labpt : num [1:2] 90.7 22.4 ...@ area : num
0.000366 ...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords
: num [1:4, 1:2] 90.7 90.6 90.7 90.7 22.4 ...$ :Formal class 'Polygon' [package "sp"]
with 5 slots ...@ labpt : num [1:2] 91.3 22.6 ...@ area : num 0.000349 ..

```



```
... ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4,
1:2] 91.3 91.3 91.3 91.3 22.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 91 22.4 .. ..@ area : num 0.000338 .. ..@ hole
: logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 91 91 91 91
22.4 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] 90.4 21.8 .. ..@ area : num 0.000335 .. ..@ hole : logi FALSE .. ..
... ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 90.4 90.4 90.5 90.4 21.8 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 90.7 23.5
... ..@ area : num 0.000325 .. ..@ hole : logi TRUE .. ..@ ringDir:
int -1 .. ..@ coords : num [1:4, 1:2] 90.7 90.7 90.7 90.7 23.5 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 90.7 22 .. ..@
area : num 0.000236 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] 90.7 90.7 90.7 90.7 22 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] 90.8 21.9 .. ..@ area : num 0.000202
... ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:4, 1:2] 90.8 90.7 90.8 90.8 21.9 ... ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] 90.6 23.6 .. ..@ area : num 0.000152 .. ..
..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 90.6
90.6 90.6 90.6 23.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
..@ labpt : num [1:2] 90.5 21.8 .. ..@ area : num 0.000144 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 90.5 90.5 90.5 90.5
21.8 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] 90.5 23.1 .. ..@ area : num 0.000128 .. ..@ hole : logi FALSE .. ..
... ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 90.5 90.5 90.5 90.5 23 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 90.5 22.2 ..
... ..@ area : num 8.89e-05 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 90.5 90.5 90.5 90.5 22.2 ... ..@ plotOrder: int
[1:35] 1 2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] 90.3 23.9 .. ..@ ID : chr "BGD" .. ..
..@ area : num 11.8 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons
:List of 6 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] -88.7 17.2 .. ..@ area : num 1.86 .. ..@ hole : logi FALSE .. ..
... ..@ ringDir: int 1 .. ..@ coords : num [1:9, 1:2] -88.4 -88.3 -88.1 -88.3 -88.2 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -87.9 17.4
... ..@ area : num 0.00645 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] -87.8 -87.9 -87.8 -87.8 17.4 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -87.9 18 .. ..
..@ area : num 0.00421 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] -87.9 -88 -87.9 -87.9 18 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -88.1 17.7 .. ..@ area : num
0.00124 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:4, 1:2] -88.1 -88.2 -88.1 -88.1 17.7 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] -87.8 17.3 .. ..@ area : num 0.00118 .. ..
... ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4,
1:2] -87.8 -87.8 -87.8 -87.8 17.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -88.1 17.6 .. ..@ area : num 0.000393 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -88 -88.1
-88.1 -88 17.6 ... ..@ plotOrder: int [1:6] 1 2 3 4 5 6 .. ..@ labpt : num [1:2] -88.7 17.2
... ..@ ID : chr "BLZ" .. ..@ area : num 1.87 .. ..$ :Formal class 'Polygons' [package "sp"]
```

```

with 5 slots .. .. ..@ Polygons :List of 1 .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 17.8 44.1 .. .. .. ..@ area : num 5.99 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:15, 1:2]
17.6 17.6 16.1 15.8 18.3 ... .. .. ..@ plotOrder: int 1 .. .. .. ..@ labpt : num [1:2] 17.8 44.1 ... ..
..@ ID : chr "BIH" .. .. .. ..@ area : num 5.99 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5
slots .. .. ..@ Polygons :List of 1 .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] -64.6 -16.7 .. .. .. ..@ area : num 92.2 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:50, 1:2] -65.2 -65.7
-66.2 -67.2 -67.9 ... .. .. ..@ plotOrder: int 1 .. .. .. ..@ labpt : num [1:2] -64.6 -16.7 ... .. ..@ ID
: chr "BOL" .. .. .. ..@ area : num 92.2 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
.. .. ..@ Polygons :List of 44 .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
.. .. .. ..@ labpt : num [1:2] 96.5 21.2 .. .. .. ..@ area : num 57.3 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:89, 1:2] 97.8 98.3 98.7 98.8
98.7 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 93.7 19.2 .. .. .. ..@ area : num 0.0426 .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 93.8 93.9 93.5 93.8 19.2 ... .. ..
.. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 94.5 16
.. .. .. ..@ area : num 0.0355 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:5, 1:2] 94.6 94.4 94.4 94.6 94.6 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 93.8 19.4 .. .. .. ..@
area : num 0.0334 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 93.8 93.7 94 93.8 19.3 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 98.4 12.5 .. .. .. ..@ area : num 0.0243 ..
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] 98.3 98.3 98.5 98.3 12.3 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] 98.5 12 .. .. .. ..@ area : num 0.0205 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.5 98.4 98.7
98.5 11.9 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 98.5 11.7 .. .. .. ..@ area : num 0.0197 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.5 98.4 98.5 98.5 11.6 ... .. ..
.. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 98.2 10.8
.. .. .. ..@ area : num 0.0192 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.2 98.3 98.1 98.2 10.9 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 93.6 18.8 .. .. .. ..
..@ area : num 0.0186 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 93.7 93.7 93.5 93.7 18.9 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 97.6 16.4 .. .. .. ..@ area : num
0.0127 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 97.6 97.5 97.6 97.6 16.2 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 98.3 11.6 .. .. .. ..@ area : num 0.0115 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.2
98.3 98.3 98.2 11.4 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 98.2 9.96 .. .. .. ..@ area : num 0.00972 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.3 98.1 98.2 98.3
10 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 93.5 19.9 .. .. .. ..@ area : num 0.00645 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 93.5 93.4 93.5 93.5 19.7 ... .. .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 94.8 15.9 ..

```

```

..@ area : num 0.00572 ..@ hole : logi FALSE ..@ ringDir:
int 1 ..@ coords : num [1:4, 1:2] 94.8 94.7 94.8 94.8 15.8 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 98 12.3 ..@
area : num 0.00507 ..@ hole : logi FALSE ..@ ringDir: int 1 ..@
..@ coords : num [1:4, 1:2] 98.1 98 97.9 98.1 12.4 ...$ :Formal class 'Polygon' [package
"sp"] with 5 slots ..@ labpt : num [1:2] 98.1 12.2 ..@ area : num 0.0047 ..
..@ hole : logi FALSE ..@ ringDir: int 1 ..@ coords : num [1:4,
1:2] 98.1 98.1 98.1 98.1 12.1 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
..@ labpt : num [1:2] 98.6 12.4 ..@ area : num 0.00434 ..@ hole :
logi FALSE ..@ ringDir: int 1 ..@ coords : num [1:6, 1:2] 98.6 98.7 98.6
98.5 98.6 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt :
num [1:2] 98 11.7 ..@ area : num 0.00432 ..@ hole : logi FALSE ..@
..@ ringDir: int 1 ..@ coords : num [1:4, 1:2] 98.1 98 98 98.1 11.6 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 98.5 11
..@ area : num 0.00418 ..@ hole : logi FALSE ..@ ringDir:
int 1 ..@ coords : num [1:4, 1:2] 98.5 98.5 98.5 98.5 11 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 93 20 ..@ area
: num 0.00414 ..@ hole : logi FALSE ..@ ringDir: int 1 ..@
coords : num [1:4, 1:2] 93 92.9 93 93 19.8 ...$ :Formal class 'Polygon' [package "sp"]
with 5 slots ..@ labpt : num [1:2] 98.3 13.1 ..@ area : num 0.00377 ..@
..@ hole : logi FALSE ..@ ringDir: int 1 ..@ coords : num [1:4, 1:2]
98.3 98.3 98.2 98.3 13 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@
..@ labpt : num [1:2] 98.2 10.1 ..@ area : num 0.00316 ..@ hole : logi
FALSE ..@ ringDir: int 1 ..@ coords : num [1:4, 1:2] 98.2 98.2 98.2 98.2
10 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num
[1:2] 98.5 10.8 ..@ area : num 0.00264 ..@ hole : logi FALSE ..@
..@ ringDir: int 1 ..@ coords : num [1:4, 1:2] 98.5 98.5 98.6 98.5 10.8 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 97.9 10.4 ..
..@ area : num 0.00174 ..@ hole : logi FALSE ..@ ringDir:
int 1 ..@ coords : num [1:4, 1:2] 97.9 97.9 97.9 97.9 10.4 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 98.5 12.4 ..@
..@ area : num 0.00161 ..@ hole : logi FALSE ..@ ringDir: int 1 ..@
..@ coords : num [1:4, 1:2] 98.5 98.5 98.5 98.5 12.4 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ..@ labpt : num [1:2] 98.3 11.3 ..@ area : num
0.00134 ..@ hole : logi FALSE ..@ ringDir: int 1 ..@ coords :
num [1:4, 1:2] 98.3 98.2 98.3 98.3 11.2 ...$ :Formal class 'Polygon' [package "sp"] with
5 slots ..@ labpt : num [1:2] 98.3 12.5 ..@ area : num 0.00126 ..@
..@ hole : logi FALSE ..@ ringDir: int 1 ..@ coords : num [1:4, 1:2] 98.3
98.2 98.2 98.3 12.5 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@
..@ labpt : num [1:2] 97.9 10.9 ..@ area : num 0.00123 ..@ hole : logi
FALSE ..@ ringDir: int 1 ..@ coords : num [1:4, 1:2] 97.9 97.9 97.9 97.9
10.9 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num
[1:2] 98.2 10.5 ..@ area : num 0.00112 ..@ hole : logi FALSE ..@
..@ ringDir: int 1 ..@ coords : num [1:4, 1:2] 98.2 98.2 98.2 98.2 10.5 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 97.7 11.9 ..
..@ area : num 0.00103 ..@ hole : logi FALSE ..@ ringDir:
int 1 ..@ coords : num [1:4, 1:2] 97.7 97.6 97.7 97.7 11.8 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] 97.9 12.8 ..

```

```

..@ area : num 0.00085 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. .. ..@ coords : num [1:4, 1:2] 97.9 97.8 97.8 97.9 12.8 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 98.2 12 .. .. .. ..@ area : num
0.00082 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 98.3 98.2 98.3 98.3 11.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 93.4 14.1 .. .. .. ..@ area : num 0.000794 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] 93.4 93.4 93.4 93.4 14.1 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] 98.04 9.81 .. .. .. ..@ area : num 0.000782 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.04
98.02 98.06 98.04 9.79 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 98.3 11.9 .. .. .. ..@ area : num 0.000692 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.3 98.3 98.3
98.3 11.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 97.8 12.6 .. .. .. ..@ area : num 0.000691 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 97.9 97.8 97.8 97.9 12.5 ...
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
93.7 14.9 .. .. .. ..@ area : num 0.000555 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 93.7 93.7 93.7 93.7 14.9 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 97.9 13.8 ..
.. .. .. ..@ area : num 0.000507 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 97.9 97.9 97.9 97.9 13.8 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 97.8 14.2 .. .. .. ..@
area : num 0.000473 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 97.8 97.8 97.8 97.8 14.1 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 98.4 11 .. .. .. ..@ area : num
0.000429 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] 98.4 98.4 98.5 98.4 11 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 97.7 15.5 .. .. .. ..@ area : num 0.000378 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
97.7 97.7 97.7 97.7 15.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 97.5 11.8 .. .. .. ..@ area : num 0.000338 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 97.5 97.4 97.5
97.5 11.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 98.6 12.4 .. .. .. ..@ area : num 8.66e-05 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 98.6 98.6 98.6 98.6 12.4 ...
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
97.9 13.9 .. .. .. ..@ area : num 5.77e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 97.9 97.9 97.9 97.9 13.9 ... .. .. ..@
plotOrder: int [1:44] 1 2 3 4 5 6 7 8 9 10 ... .. .. ..@ labpt : num [1:2] 96.5 21.2 .. .. ..@ ID :
chr "MMR" .. .. .. ..@ area : num 57.6 .. .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
.. .. ..@ Polygons :List of 1 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 2.33 9.6 .. .. .. ..@ area : num 10.1 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:17, 1:2] 2.484 1.635 1.399
1.355 0.777 ... .. .. ..@ plotOrder: int 1 .. .. .. ..@ labpt : num [1:2] 2.33 9.6 .. .. ..@ ID : chr
"BEN" .. .. .. ..@ area : num 10.1 .. .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..
.. .. ..@ Polygons :List of 50 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 160.17 -9.63 .. .. .. ..@ area : num 0.352 .. .. .. ..@ hole : logi

```

FALSE@ ringDir: int 1@ coords : num [1:6, 1:2] 160 160 161 160
160\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num
[1:2] 159.41 -8.15@ area : num 0.145@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 159.85 159.89 158.49 159.85 -8.33
... .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num
[1:2] 157.51 -8.28@ area : num 0.138@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:5, 1:2] 158 158 157 157 158\$.
:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 156.93 -7.06
.. .. .@ area : num 0.116@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] 157.43 156.94 156.44 157.43 -7.32\$. :Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 161.7 -10.5
.. .. .@ area : num 0.0974@ hole : logi FALSE@ ringDir: int 1 ..
.. .. .@ coords : num [1:4, 1:2] 161.5 162.4 161.3 161.5 -10.3\$. :Formal class
'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 160.98 -8.94
.. .. .@ area : num 0.0508@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] 160.97 161.38 160.58 160.97 -8.85\$. :Formal class
'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 156.69 -7.73
.. .. .@ area : num 0.0292@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] 156.7 156.6 156.8 156.7 -7.9\$. :Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] 161.44 -9.58@ area :
num 0.0271@ hole : logi FALSE@ ringDir: int 1@
coords : num [1:4, 1:2] 161.57 161.4 161.35 161.57 -9.72\$. :Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] 158 -8.64@ area : num
0.0243@ hole : logi FALSE@ ringDir: int 1@ coords :
num [1:4, 1:2] 158 157.88 158.12 158 -8.77\$. :Formal class 'Polygon' [package "sp"]
with 5 slots@ labpt : num [1:2] 160.2 -11.6@ area : num 0.0239
.. .. .@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2]
160.1 160.5 160 160.1 -11.5\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] 157.3 -8.6@ area : num 0.0237@ hole
: logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 157.4 157.4
157.2 157.4 -8.5\$. :Formal class 'Polygon' [package "sp"] with 5 slots@
labpt : num [1:2] 165.9 -10.7@ area : num 0.021@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 166.1 165.8 165.9 166.1
-10.8\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] 157.05 -8.02@ area : num 0.0201@ hole : logi FALSE ..
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 157.16 156.97 157.03 157.16
-8.15\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] 155.76 -7.05@ area : num 0.0118@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 155.9 155.7 155.7 155.9 -7.1 ...
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
160.31 -9.12@ area : num 0.00915@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 160.41 160.21 160.32 160.41 -9.14 ...
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
159.6 -8.46@ area : num 0.00776@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] 159.68 159.54 159.57 159.68 -8.55
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 159.11
-9.05@ area : num 0.00633@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] 159.15 159.03 159.14 159.15 -9.11

```

.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 166.8
-11.6 .. ..@ area : num 0.00611 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 156.56 -8.08
.. ..@ area : num 0.0055 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 157.57 -8.75 .. ..
.. ..@ area : num 0.00524 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 158.4 -7.63 .. ..
.. ..@ area : num 0.0048 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 158.19 -8.77 .. ..
.. ..@ area : num 0.00444 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 157.2 -8.2 .. ..
.. ..@ area : num 0.00434 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 157.1 -8.26 .. ..
.. ..@ area : num 0.00359 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 158.35 -7.52 .. ..
.. ..@ area : num 0.00346 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 157.74 -7.43 .. ..
.. ..@ area : num 0.00305 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 166.5 -11.3 .. ..
.. ..@ area : num 0.00244 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 161.96 -9.74 .. ..@ area :
num 0.0024 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] 161.97 161.94 161.97 161.97 -9.85 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 156.09 -6.92 .. ..@ area :
num 0.0024 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] 156.11 156.08 156.07 156.11 -6.94 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 159.2 -9.09 .. ..@ area :
num 0.00233 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] 159.2 159.17 159.23 159.2 -9.13 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 155.56 -7.36 .. ..@ area :
num 0.00219 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] 155.59 155.51 155.58 155.59 -7.39 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 160.08 -8.99 .. ..@ area :
num 0.00154 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] 160 160 160 160 -9 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 161.7 -10.3 .. ..@ area : num 0.00145 ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:4, 1:2] 161.8 161.7 161.8 161.8 -10.3 .. ..$
:Formal class 'Polygon' [package "sp"] with

```

```
5 slots .. .. ..@ labpt : num [1:2] 156.8 -8.09 .. .. ..@ area : num 0.00131 .. ..
.. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4,
1:2] 156.84 156.78 156.78 156.84 -8.12 ... .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. ..@ labpt : num [1:2] 159.83 -9.14 .. .. ..@ area : num 0.000827 .. ..
.. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4,
1:2] 159.83 159.81 159.85 159.83 -9.17 ... .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. ..@ labpt : num [1:2] 158.55 -7.69 .. .. ..@ area : num 0.000649 ..
.. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num
[1:4, 1:2] 158.6 158.5 158.5 158.6 -7.7 ... .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. ..@ labpt : num [1:2] 156.02 -6.81 .. .. ..@ area : num 0.000628 .. ..
.. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4,
1:2] 156.02 156 156.05 156.02 -6.82 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. ..@ labpt : num [1:2] 159.8 -11.3 .. .. ..@ area : num 0.000588 .. .. ..
.. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2]
159.9 159.8 159.8 159.9 -11.3 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 161.04 -8.76 .. .. ..@ area : num 0.000578 .. .. ..@
hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 161.06
161.04 161.01 161.06 -8.75 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 162.5 -10.8 .. .. ..@ area : num 0.000565 .. .. ..@
hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 162.5
162.5 162.5 162.5 -10.9 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 160.03 -8.89 .. .. ..@ area : num 0.000409 .. .. ..@ hole :
logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 160.05 160.01
160.03 160.05 -8.92 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 159.37 -5.43 .. .. ..@ area : num 0.000318 .. .. ..@ hole : logi
FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 159.4 159.37 159.35
159.4 -5.45 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt
: num [1:2] 159.7 -5.5 .. .. ..@ area : num 0.000163 .. .. ..@ hole : logi FALSE ..
.. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 159.71 159.71 159.72 159.71
-5.52 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt :
num [1:2] 159.51 -5.48 .. .. ..@ area : num 0.000155 .. .. ..@ hole : logi FALSE
.. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 159.5 159.5 159.5 159.5
-5.5 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num
[1:2] 167.2 -9.95 .. .. ..@ area : num 0.000144 .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 167.2 167.19 167.21 167.2 -9.96 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
167.12 -9.87 .. .. ..@ area : num 0.000126 .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 167.13 167.11 167.13 167.13 -9.88 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
162.74 -8.38 .. .. ..@ area : num 0.00011 .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 162.74 162.76 162.73 162.74 -8.37 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
167.1 -9.85 .. .. ..@ area : num 8.62e-05 .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 167.1 167.09 167.11 167.1 -9.85 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
161.38 -9.46 .. .. ..@ area : num 4.43e-05 .. .. ..@ hole : logi TRUE .. .. ..
.. .. ..@ ringDir: int -1 .. .. ..@ coords : num [1:4, 1:2] 161.39 161.39 161.38 161.39 -9.47 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
```

```

159.25 -5.31 ... ..@ area : num 3.81e-05 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 159.25 159.25 159.25 159.25 -5.31 ...
... ..@ plotOrder: int [1:50] 1 2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] 160.17 -9.63 ..
... ..@ ID : chr "SLB" ... ..@ area : num 1.17 ... ..$ :Formal class 'Polygons' [package "sp"]
with 5 slots ... ..@ Polygons :List of 62 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] -53.1 -10.9 ... ..@ area : num 701 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:237, 1:2]
-60.1 -60.1 -59.7 -59.6 -60 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -49.71 -0.936 ... ..@ area : num 2.96 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:11, 1:2] -49.7 -48.4
-48.6 -49.2 -50.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
..@ labpt : num [1:2] -51.511 -0.977 ... ..@ area : num 0.323 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:11, 1:2] -51.9 -52 -51.9
-51.7 -51.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -50.0044 0.0882 ... ..@ area : num 0.0928 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -49.636 -49.985 -50.393
-49.636 0.228 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] -49.6266 -0.0428 ... ..@ area : num 0.0343 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -49.526 -49.853
-49.502 -49.526 -0.134 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -51.006 -0.742 ... ..@ area : num 0.0299 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -51.132 -51.07
-50.816 -51.132 -0.959 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -50.81 -0.19 ... ..@ area : num 0.0275 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -50.5569
-50.8578 -51.0272 -50.5569 -0.0625 ... ..$ :Formal class 'Polygon' [package "sp"] with 5
slots ... ..@ labpt : num [1:2] -50.442 0.353 ... ..@ area : num 0.025 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
-50.416 -50.536 -50.374 -50.416 0.211 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] -50.203 0.501 ... ..@ area : num 0.0239 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
-50.238 -50.308 -50.064 -50.238 0.351 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] -52.05 -1.54 ... ..@ area : num 0.0204 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5, 1:2]
-52 -52.2 -52 -51.9 -52 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -45.3 -23.9 ... ..@ area : num 0.0196 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -45.2 -45.2 -45.4
-45.2 -23.8 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -48.5 -27.5 ... ..@ area : num 0.0186 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -48.6 -48.5 -48.4 -48.6 -27.8 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-51.3 -1.1 ... ..@ area : num 0.0174 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:7, 1:2] -51.4 -51.4 -51.4 -51.2 -51.2 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -51 -1.91 ...
... ..@ area : num 0.0169 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1
... ..@ coords : num [1:4, 1:2] -50.86 -50.99 -51.15 -50.86 -1.91 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -51.207 -0.297 ..
... ..@ area : num 0.0165 ... ..@ hole : logi FALSE ... ..@ ringDir: int

```



```
1 .. .. .. ..@ coords : num [1:4, 1:2] -51.381 -51.103 -51.138 -51.381 -0.485 ... .. .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -48.6 -26.3
.. .. .. ..@ area : num 0.016 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] -48.6 -48.7 -48.5 -48.6 -26.4 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -50.42 2.01 .. .. ..
.. .. ..@ area : num 0.0157 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -50.4 -50.51 -50.36 -50.4 1.88 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -50.5213 0.0983 .. .. ..
.. .. ..@ area : num 0.015 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] -50.4556 -50.6433 -50.465 -50.4556 -0.0228 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -39 -13.5 .. .. ..
.. .. ..@ area : num 0.0144 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:7, 1:2] -38.9 -39 -39 -39 -39 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -44.2 -23.1 .. .. .. ..@ area : num 0.0143
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] -44.1 -44.4 -44.2 -44.1 -23.2 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -51.03 -0.392 .. .. .. ..@ area : num 0.0139 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -51.11 -51.03 -50.95 -51.11 -0.54 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -48.38 -1.14 .. .. .. ..@ area : num 0.0129 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:5,
1:2] -48.3 -48.5 -48.4 -48.3 -48.3 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] -50.159 0.838 .. .. .. ..@ area : num 0.0122 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-50.007 -50.268 -50.201 -50.007 0.882 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -48.97 -1.69 .. .. .. ..@ area : num 0.0119 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-49 -49 -48.9 -49 -1.8 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] -44.55 -2.85 .. .. .. ..@ area : num 0.0113 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -44.59 -44.58
-44.48 -44.59 -3.05 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] -38.7 -13 .. .. .. ..@ area : num 0.011 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -38.8 -38.6 -38.6
-38.8 -13.1 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -51.055 -0.977 .. .. .. ..@ area : num 0.0109 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:7, 1:2] -51 -50.9 -51 -51 -51.1 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-47.8 -24.9 .. .. .. ..@ area : num 0.00977 .. .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -47.9 -47.8 -47.6 -47.9 -25 ... .. ..
.. .. ..@ area : num 0.00933 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:6, 1:2] -44.7 -44.7 -44.8 -44.8 -44.7 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -50.871 -0.446 .. ..
.. ..@ area : num 0.00918 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] -50.959 -50.878 -50.777 -50.959 -0.567 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -46.489 -0.969 .. ..
.. ..@ area : num 0.00861 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:6, 1:2] -46.5 -46.5 -46.5 -46.5 -46.4 ... .. .. .. .$ :Formal class
```

```

'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -50.8096 0.0124 .. .. ..
.. ..@ area : num 0.00849 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] -50.9017 -50.8297 -50.6975 -50.9017 -0.0475 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -52.34 -1.47
.. .. .. ..@ area : num 0.00839 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] -52.42 -52.43 -52.17 -52.42 -1.53 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -49.1 -1.8 .. .. ..
.. ..@ area : num 0.00763 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] -49.02 -49.16 -49.06 -49.02 -1.83 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -50.82 -0.315 .. .. ..
.. ..@ area : num 0.00694 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] -50.803 -50.908 -50.749 -50.803 -0.359 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -44.95 -1.32 .. .. ..
.. ..@ area : num 0.00675 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] -45 -45 -44.9 -45 -1.4 ... .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -47.678 -0.647 .. .. .. ..@ area : num
0.00663 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:6, 1:2] -47.7 -47.7 -47.7 -47.7 -47.6 ... .. .. .$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] -45.65 -1.28 .. .. .. ..@ area : num 0.00601 ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -45.63 -45.69 -45.63 -45.63 -1.35 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] -50.01 0.99 .. .. .. ..@ area : num 0.00529 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-50.009 -50.074 -49.948 -50.009 0.935 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -50.17 0.291 .. .. .. ..@ area : num 0.00489 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-50.243 -50.184 -50.084 -50.243 0.229 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -47.93 -0.683 .. .. .. ..@ area : num 0.00476 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:6,
1:2] -47.9 -48 -48 -47.9 -47.9 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -48.3 -25.4 .. .. .. ..@ area : num 0.00467 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -48.3
-48.3 -48.3 -25.5 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] -50.895 -0.767 .. .. .. ..@ area : num 0.00464 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -50.92
-50.923 -50.843 -50.92 -0.845 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -50.47 2.17 .. .. .. ..@ area : num 0.00445 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -50.48
-50.52 -50.41 -50.48 2.12 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] -42.1 -2.71 .. .. .. ..@ area : num 0.00428 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -42.05 -42.18
-42.07 -42.05 -2.76 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] -48.56 -1.44 .. .. .. ..@ area : num 0.00416 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -48.53 -48.59
-48.55 -48.53 -1.52 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] -51.351 -0.498 .. .. .. ..@ area : num 0.00372 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -51.403 -51.411
-51.239 -51.403 -0.541 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..

```

```

... ..@ labpt : num [1:2] -38.9 -13.6 .. .. .. ..@ area : num 0.00348 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -38.9 -39 -38.9
-38.9 -13.7 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -50.94 -0.292 .. .. .. ..@ area : num 0.00343 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -50.907 -51.025 -50.889
-50.907 -0.336 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] -46.3 -24 .. .. .. ..@ area : num 0.00316 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -46.3 -46.4 -46.3 -46.3 -24
... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-48.66 -1.44 .. .. .. ..@ area : num 0.00301 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -48.63 -48.7 -48.66 -48.63 -1.48 ... ..
.. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -44.63
-2.96 .. .. .. ..@ area : num 0.00274 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -44.61 -44.66 -44.61 -44.61 -3.01 ... ..
.. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -51.058
-0.618 .. .. .. ..@ area : num 0.00265 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -51.051 -51.098 -51.025 -51.051 -0.659 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-37.1 -11.1 .. .. .. ..@ area : num 0.00222 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -37.1 -37.1 -37 -37.1 -11.1 ... ..
.. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -50.058
0.908 .. .. .. ..@ area : num 0.000862 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -50.038 -50.094 -50.042 -50.038 0.884 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-32.42 -3.86 .. .. .. ..@ area : num 0.000634 .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -32.45 -32.42 -32.39 -32.45 -3.88 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-43.68 -2.31 .. .. .. ..@ area : num 0.000566 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -43.69 -43.74 -43.62 -43.69 -2.33 ... ..
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -30.3
-20.5 .. .. .. ..@ area : num 0.000561 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -30.3 -30.3 -30.3 -30.3 -20.5 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -45.1 -23.8 ..
.. .. .. ..@ area : num 0.000328 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] -45.1 -45.1 -45.1 -45.1 -23.8 ... .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -34.88 -7.06 .. ..
.. .. ..@ area : num 0.00019 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] -34.87 -34.89 -34.87 -34.87 -7.07 ... .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -34.9 -7 .. .. ..
..@ area : num 7.21e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. .. ..@ coords : num [1:4, 1:2] -34.85 -34.86 -34.86 -34.85 -7.01 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -29.8 -20.5 .. .. ..
..@ area : num 5.06e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. .. ..@ coords : num [1:4, 1:2] -29.8 -29.8 -29.9 -29.8 -20.5 ... .. .. ..@ plotOrder: int [1:62] 1
2 3 4 5 6 7 8 9 10 ... .. .. ..@ labpt : num [1:2] -53.1 -10.9 .. .. ..@ ID : chr "BRA" .. .. ..@
area : num 705 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List
of 1 .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 25.3 42.7 .. .. .. ..@ area : num 12.1 .. .. .. ..@ hole : logi FALSE .. .. .. ..

```

```

..@ ringDir: int 1 .. .. .. ..@ coords : num [1:24, 1:2] 27.9 27.4 28 27.4 26.4 ... .. .. ..@
plotOrder: int 1 .. .. .. ..@ labpt : num [1:2] 25.3 42.7 .. .. .. ..@ ID : chr "BGR" .. .. .. ..@ area :
num 12.1 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 2
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2]
114.59 4.51 .. .. .. .. ..@ area : num 0.351 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:5, 1:2] 115 115 115 114 115 ... .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 115.19 4.68 .. .. .. ..
.. .. .. ..@ area : num 0.0558 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. ..
.. .. .. ..@ coords : num [1:5, 1:2] 115 115 115 115 115 ... .. .. .. ..@ plotOrder: int [1:2] 1 2 ..
.. .. .. ..@ labpt : num [1:2] 114.59 4.51 .. .. .. ..@ ID : chr "BRN" .. .. .. ..@ area : num 0.407 .. ..$
:Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 475 .. .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -101.7 57.7
.. .. .. .. ..@ area : num 1260 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1
.. .. .. .. ..@ coords : num [1:593, 1:2] -134 -134 -134 -134 -135 ... .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -74.7 68.6 .. .. .. .. ..@
area : num 110 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..
..@ coords : num [1:332, 1:2] -73.4 -73.2 -73.3 -73.4 -73.9 ... .. .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -78.1 80.3 .. .. .. .. ..@ area :
num 89.7 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords
: num [1:162, 1:2] -70.1 -66.3 -68.6 -64.7 -64.9 ... .. .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -110.3 70.9 .. .. .. .. ..@ area : num 53.1
.. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num
[1:64, 1:2] -114 -115 -114 -113 -111 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. .. ..@ labpt : num [1:2] -121 73 .. .. .. .. ..@ area : num 19.4 .. .. .. .. ..@
hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:22, 1:2] -120
-120 -120 -119 -119 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
.. ..@ labpt : num [1:2] -91.1 79.6 .. .. .. .. ..@ area : num 17.6 .. .. .. .. ..@ hole : logi
FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:53, 1:2] -92.7 -90.8 -89.2
-88.8 -88.1 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt
: num [1:2] -87.5 75.4 .. .. .. .. ..@ area : num 16.8 .. .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:44, 1:2] -95.7 -93.2 -93.5 -91.4 -90.5 ... ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -56.1
48.7 .. .. .. .. ..@ area : num 12.9 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir:
int 1 .. .. .. .. ..@ coords : num [1:69, 1:2] -53.8 -54.1 -54.1 -53.8 -53 ... .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -111.5 75.5 .. .. .. ..
.. ..@ area : num 12.2 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:38, 1:2] -109 -109 -108 -108 -108 ... .. .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -99 72.7 .. .. .. .. ..@ area : num
8.54 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords :
num [1:35, 1:2] -99.8 -99.2 -97.8 -97 -97.7 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. .. ..@ labpt : num [1:2] -84.2 64.4 .. .. .. .. ..@ area : num 7.88 .. .. ..
.. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:23, 1:2]
-85.5 -85.2 -85.3 -84.9 -84.4 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] -93.5 73.3 .. .. .. .. ..@ area : num 6.84 .. .. .. .. ..@ hole :
logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:21, 1:2] -92.6 -90.2
-92.1 -94.3 -93.5 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
.. ..@ labpt : num [1:2] -118.9 76.7 .. .. .. .. ..@ area : num 5.59 .. .. .. .. ..@ hole : logi FALSE ..
.. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:27, 1:2] -116 -115 -116 -116 -116 ...

```

```
.. ..@ labpt : num [1:2]
-99.4 75.8 .. ..@ area : num 4.35 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:27, 1:2] -98.4 -97.5 -97.9 -97.4 -97.3 ... ..@$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -102 78.6 ..
.. ..@ area : num 4.12 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1
.. ..@ coords : num [1:23, 1:2] -103.6 -102.6 -101.6 -100 -99.5 ... ..@$ :Formal class 'Polygon'
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -125.7 49.7 .. ..
.. ..@ area : num 3.55 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:25, 1:2] -127 -125 -125 -124 -124 ... ..@$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -78.7 73.2 .. ..@ area : num
3.1 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:7, 1:2] -80.1 -77.4 -76.1 -79.4 -80.9 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] -97.3 69.1 .. ..@ area : num 2.84 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:10, 1:2] -97.4
-95.2 -96.5 -99.6 -98.4 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -96.7 78.3 .. ..@ area : num 1.88 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:12, 1:2] -96.8 -94.9 -95.4
-94.9 -97.1 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] -76.1 67.8 .. ..@ area : num 1.86 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:8, 1:2] -75.6 -75 -75.2 -76.7 -77.2 ... ..
.. ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -94.8
75.2 .. ..@ area : num 1.84 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:6, 1:2] -94.4 -93.5 -93.5 -96.6 -95.7 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -111.6 77.7 .. ..
.. ..@ area : num 1.46 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:8, 1:2] -110 -111 -110 -110 -112 ... ..@$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -105.6 73.4 .. ..@ area
: num 1.13 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:5, 1:2] -105 -104 -105 -107 -105 ... ..@$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] -60.8 46.2 .. ..@ area : num 1.01 ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:12, 1:2] -60.4 -60.6 -60.4 -61.1 -60.4 ... ..@$ :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] -83.1 62.6 .. ..@ area : num 0.922 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:6, 1:2] -81.9
-83.1 -83.7 -83.9 -83.3 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -132.4 53.7 .. ..@ area : num 0.777 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:19, 1:2] -133 -132 -133
-132 -132 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] -134.9 69.2 .. ..@ area : num 0.77 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:24, 1:2] -134 -134 -135 -135 -135 ... ..
.. ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -111
78.5 .. ..@ area : num 0.715 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:5, 1:2] -110 -109 -113 -111 -110 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -63 49.4 .. ..@
area : num 0.585 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:5, 1:2] -62.1 -61.7 -63.1 -64.5 -62.1 ... ..@$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -94.6 77.6 .. ..@ area : num
0.579 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords :
```

```

num [1:5, 1:2] -95.4 -93.1 -93.6 -96.3 -95.4 ... ..$.:Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -63.3 46.4 ... ..@ area : num 0.576 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:11,
1:2] -64 -63.7 -63.6 -63.2 -62 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -79.8 62 ... ..@ area : num 0.494 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] -79.5 -79.3
-79.7 -80.3 -80 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] -79.4 56.2 ... ..@ area : num 0.345 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:15, 1:2] -79 -78.9 -78.9 -79.2 -79 ...
... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-118.4 75.8 ... ..@ area : num 0.293 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -118.3 -119.4 -117.5 -118.3 75.6 ... ..
..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -81.3 53
... ..@ area : num 0.276 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -81.1 -80.7 -82.1 -81.1 53.2 ... ..$.:Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -132 52.9 ... ..@
area : num 0.244 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@
coords : num [1:12, 1:2] -132 -132 -132 -132 -132 ... ..$.:Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] -105.2 77.4 ... ..@ area : num 0.244 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5,
1:2] -105 -104 -105 -106 -105 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -104.2 75.2 ... ..@ area : num 0.242 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5, 1:2] -104 -105 -104
-104 -104 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] -128.8 52.9 ... ..@ area : num 0.241 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:12, 1:2] -129 -129 -129 -129 -129 ... ..
... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -104
76.5 ... ..@ area : num 0.22 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:5, 1:2] -104 -103 -104 -105 -104 ... ..$.:Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -99.4 79.9 ... ..@
area : num 0.194 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -99.5 -98.6 -100.2 -99.5 80.1 ... ..$.:Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -78 63.3 ... ..@ area : num
0.192 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords :
num [1:5, 1:2] -78.1 -77.5 -77.9 -78.6 -78.1 ... ..$.:Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -90.5 77.5 ... ..@ area : num 0.191 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
-90.6 -89.6 -91.2 -90.6 77.6 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -78.7 69.1 ... ..@ area : num 0.189 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5, 1:2] -78.4 -78.2
-78.8 -79.4 -78.4 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] -93.3 63.9 ... ..@ area : num 0.174 ... ..@ hole : logi TRUE ..
... ..@ ringDir: int -1 ... ..@ coords : num [1:4, 1:2] -93.5 -92.5 -93.8 -93.5 63.8
... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] -80.1 69.7 ... ..@ area : num 0.173 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -79.4 -80 -80.8 -79.4 69.8 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -83.9 65.9 ..
... ..@ area : num 0.167 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1

```

... ..@ coords : num [1:10, 1:2] -83.9 -83.7 -83.7 -83.2 -83.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -86.7 68@ area : num 0.165@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:5, 1:2] -86.4 -86.6 -87 -86.7 -86.4\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -103.5 76.1@ area : num 0.149@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -102.5 -103.3 -104.5 -102.5 76.2\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.1 68@ area : num 0.144@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.2 -73.3 -74.8 -74.2 68.1\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -98.7 73.9@ area : num 0.128@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -98.9 -99.4 -97.6 -98.9 73.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -90.1 76.7@ area : num 0.122@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -89.9 -90.6 -89.7 -89.9 76.5\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -129.8 53.6@ area : num 0.0955@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:8, 1:2] -130 -130 -130 -130 -130\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -101.7 77.8@ area : num 0.0938@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -101.7 -100.9 -102.5 -101.7 77.9\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -114.3 77.9@ area : num 0.0932@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -114 -114 -115 -114 78\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -96.6 75.5@ area : num 0.088@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -95.9 -96.9 -97.1 -95.9 75.6\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -65 61.5@ area : num 0.0878@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -64.7 -64.9 -65.5 -64.7 61.5\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -114.1 76.8@ area : num 0.0874@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -113.5 -114.9 -113.9 -113.5 76.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -75.1 68.5@ area : num 0.0756@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.8 -75.4 -75 -74.8 68.3\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -127.6 52.2@ area : num 0.0742@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -128 -128 -127 -128 52\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -78.3 69.6@ area : num 0.0691@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -77.9 -78.9 -78.2 -77.9 69.6\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -95.7 69.5@ area : num 0.0688@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:8, 1:2] -95.5 -95.5 -95.7 -95.7 -95.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -68.1 60.4@ area : num 0.0634@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -68.3 -68.1 -67.8 -68.3 60.2\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -84.8 65.7@ area : num

```

0.0634 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -84.7 -85.2 -84.6 -84.7 65.5 ... ..@ area : num 0.0614 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num
[1:4, 1:2] -129.9 -129.8 -130.5 -129.9 53.4 ... ..@ area : num 0.0581 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5,
1:2] -78.9 -79.8 -78.8 -79.2 -78.9 ... ..@ area : num 0.056 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -101.8
-102.3 -101.7 -101.8 68.6 ... ..@ area : num 0.0535 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -71.5 -72 -72.2
-71.5 71 ... ..@ area : num 0.053 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -100.2 -100.6 -100.6 -100.2 68.8 ...
... ..@ area : num 0.0517 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -102.4 -102.3 -104 -102.4 76.1 ... ..@
area : num 0.0487 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] -94.4 -94.9 -94.5 -94.4 75.8 ... ..@
area : num 0.0464 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ...
... ..@ coords : num [1:4, 1:2] -101.4 -101.7 -100.2 -101.4 76.6 ... ..@
area : num 0.0462 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ...
... ..@ coords : num [1:6, 1:2] -127 -127 -127 -127 -127 ... ..@ area : num
0.0458 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -70.7 -70.2 -71.2 -70.7 62.8 ... ..@ area : num 0.0433 ...
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
-96.8 -97.1 -96.6 -96.8 72.9 ... ..@ area : num 0.0411 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -78.5 -79 -78.9
-78.5 68.6 ... ..@ area : num 0.0406 ... ..@ hole : logi FALSE ...
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -61.4 -62 -61.9 -61.4 47.6 ...
... ..@ area : num 0.0391 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -76.8 -76.5 -77.5 -76.8 63.6 ... ..@
area : num 0.038 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -103.1 -103.4 -102 -103.1 75.7 ... ..@
area : num 0.0377 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ...
... ..@ coords : num [1:4, 1:2] -96.7 -96.1 -96.2 -96.7 69.6 ... ..@

```



```
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -87 70.1 .. .. .@ area : num
0.0377 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords
: num [1:4, 1:2] -87.1 -86.5 -87.4 -87.1 70.2 ... .. .$. :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .@ labpt : num [1:2] -104.8 68.5 .. .. .@ area : num 0.0374 .. ..
.. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4,
1:2] -104.5 -105.1 -104.7 -104.5 68.4 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .@ labpt : num [1:2] -61.5 56.8 .. .. .@ area : num 0.0358 .. .. .
..@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -61.4
-61.4 -61.6 -61.4 56.9 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .
.. .. .@ labpt : num [1:2] -77 69.3 .. .. .@ area : num 0.035 .. .. .@ hole : logi
FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -77 -76.6 -77.4 -77
69.4 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num
[1:2] -128.1 51.9 .. .. .@ area : num 0.0349 .. .. .@ hole : logi FALSE .. .. .
.. ..@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -128.1 -128.3 -128 -128.1 51.8 ... ..
.. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -130
54 .. .. .@ area : num 0.0327 .. .. .@ hole : logi FALSE .. .. .@ ringDir:
int 1 .. .. .@ coords : num [1:4, 1:2] -130 -131 -130 -130 54 ... .. .$. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -129.1 52.6 .. .. .
..@ area : num 0.0327 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .
.. ..@ coords : num [1:4, 1:2] -129 -129.3 -128.9 -129 52.5 ... .. .$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -68 69.6 .. .. .@ area : num
0.0318 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords
: num [1:4, 1:2] -67.9 -68.2 -67.9 -67.9 69.5 ... .. .$. :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .@ labpt : num [1:2] -128.4 52.6 .. .. .@ area : num 0.0305 .. ..
.. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4,
1:2] -128.4 -128.4 -128.3 -128.4 52.4 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .@ labpt : num [1:2] -126.4 50.7 .. .. .@ area : num 0.0302 .. .. .
.. ..@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2]
-126.3 -126.6 -126.3 -126.3 50.7 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] -64.3 63.5 .. .. .@ area : num 0.0291 .. .. .@
hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -64.1
-64.5 -64.3 -64.1 63.3 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .
.. ..@ labpt : num [1:2] -95.6 74.6 .. .. .@ area : num 0.0289 .. .. .@ hole : logi
FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -95.3 -95.9 -95.5
-95.3 74.5 ... .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt
: num [1:2] -129.2 53.2 .. .. .@ area : num 0.0283 .. .. .@ hole : logi FALSE ..
.. .. .@ ringDir: int 1 .. .. .@ coords : num [1:5, 1:2] -129 -129 -129 -129 -129 ...
.. .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2]
-129 53.4 .. .. .@ area : num 0.0279 .. .. .@ hole : logi FALSE .. .. .
.. ..@ ringDir: int 1 .. .. .@ coords : num [1:5, 1:2] -129 -129 -129 -129 -129 ... .. .$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -79.8 56.4 ..
.. .. .@ area : num 0.0277 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int
1 .. .. .@ coords : num [1:4, 1:2] -79.6 -80.1 -79.5 -79.6 56.4 ... .. .$. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -90.3 69.3 .. .. .@
area : num 0.0275 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .
.. ..@ coords : num [1:4, 1:2] -90.3 -90.5 -90.2 -90.3 69.2 ... .. .$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -129 53.6 .. .. .@ area : num
0.0268 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords
```

```

: num [1:5, 1:2] -129 -129 -129 -129 -129 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] -79 68.3 .. ..@ area : num 0.0258 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
-79 -79.2 -78.8 -79 68.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -130.3 53.7 .. ..@ area : num 0.0258 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -130.1 -130.4
-130.3 -130.1 53.6 ... .. [list output truncated] .. ..@ plotOrder: int [1:475] 1 2 3 4 5
6 7 8 9 10 ... ..@ labpt : num [1:2] -101.7 57.7 .. ..@ ID : chr "CAN" .. ..@ area :
num 1662 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 5
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
104.9 12.7 .. ..@ area : num 15.2 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:23, 1:2] 107 108 106 106 106 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 103.3 10.7 .. ..
.. ..@ area : num 0.00396 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] 103.3 103.3 103.2 103.3 10.7 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 103 11.3 .. ..@
area : num 0.00391 .. ..@ hole : logi TRUE .. ..@ ringDir: int -1 .. ..
.. ..@ coords : num [1:4, 1:2] 103 103 103 103 11.2 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] 103.8 10.5 .. ..@ area : num 0.00197
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:5, 1:2] 104 104 104 104 104 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. ..@ labpt : num [1:2] 103 11.5 .. ..@ area : num 0.00103 .. ..@
hole : logi TRUE .. ..@ ringDir: int -1 .. ..@ coords : num [1:4, 1:2] 103 103
103 103 11.4 ... ..@ plotOrder: int [1:5] 1 2 3 4 5 .. ..@ labpt : num [1:2] 104.9 12.7 ..
.. ..@ ID : chr "KHM" .. ..@ area : num 15.2 .. ..$ :Formal class 'Polygons' [package "sp"]
with 5 slots .. ..@ Polygons :List of 6 .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] 80.68 7.65 .. ..@ area : num 5.27 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:17, 1:2] 80.3
80.8 80.9 81.2 81.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 79.9 9.67 .. ..@ area : num 0.0058 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 79.97 79.87 79.85
79.97 9.62 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 81.78 7.61 .. ..@ area : num 0.00477 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 81.81 81.72 81.8 81.81 7.48 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
79.82 9.04 .. ..@ area : num 0.00417 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 79.91 79.85 79.69 79.91 9.02 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 79.68 9.51
.. ..@ area : num 0.00165 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 79.72 79.66 79.66 79.72 9.48 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 81.71 7.69 .. ..
.. ..@ area : num 0.000205 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:5, 1:2] 81.7 81.7 81.7 81.7 81.7 ... ..@ plotOrder: int [1:6] 1
2 3 4 5 6 .. ..@ labpt : num [1:2] 80.68 7.65 .. ..@ ID : chr "LKA" .. ..@ area : num
5.29 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 1 .. ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 15.218
-0.873 .. ..@ area : num 27.8 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:37, 1:2] 12.8 12 11.1 11.5 11.9 ... ..@ plotOrder: int 1

```

```
... ..@ labpt : num [1:2] 15.218 -0.873 .. ..@ ID : chr "COG" .. ..@ area : num 27.8 ..
..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 2 .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 23.65 -2.87
.. .. ..@ area : num 190 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int
1 .. .. ..@ coords : num [1:74, 1:2] 25.9 27.5 28.4 29.6 30.9 ... .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 12.84 -5.89 .. .. ..
..@ area : num 0.00643 .. .. ..@ hole : logi TRUE .. .. ..@ ringDir: int -1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 12.95 12.84 12.74 12.95 -5.88 ... .. ..@ plotOrder: int [1:2] 1
2 .. .. ..@ labpt : num [1:2] 23.65 -2.87 .. .. ..@ ID : chr "COD" .. .. ..@ area : num 190 ..
..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 1 .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 29.9 -3.35 ..
.. .. ..@ area : num 2.33 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:11, 1:2] 29.2 29 29.9 30 30.6 ... .. ..@ plotOrder: int 1 .. .. ..@
labpt : num [1:2] 29.9 -3.35 .. .. ..@ ID : chr "BDI" .. .. ..@ area : num 2.33 ..$ :Formal class
'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 34 .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 103.8 36.6 .. .. ..@
area : num 946 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@
coords : num [1:285, 1:2] 123 126 128 128 131 ... .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. ..@ labpt : num [1:2] 109.7 19.2 .. .. ..@ area : num 3 .. ..
.. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:8, 1:2]
111 111 110 110 109 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 122.1 30.1 .. .. ..@ area : num 0.0217 .. .. ..@ hole : logi
FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 122 122 122 122 30
... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
121.5 31.7 .. .. ..@ area : num 0.0167 .. .. ..@ hole : logi FALSE .. .. ..@
ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 121.5 121.9 121.2 121.5 31.7 ... .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 110 21 ..
.. .. ..@ area : num 0.0134 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1
.. .. ..@ coords : num [1:4, 1:2] 110.5 110.5 110.2 110.5 21.1 ... .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 117.4 23.7 .. .. ..@
area : num 0.0119 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 117.4 117.5 117.3 117.4 23.8 ... .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 119.7 25.5 .. .. ..@ area : num
0.0117 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords :
num [1:4, 1:2] 119.8 119.7 119.7 119.8 25.6 ... .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. ..@ labpt : num [1:2] 119.8 32.2 .. .. ..@ area : num 0.0105 .. ..
.. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2]
119.9 119.7 119.8 119.9 32.1 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 118.1 24.5 .. .. ..@ area : num 0.0085 .. .. ..@ hole
: logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:5, 1:2] 118 118 118
118 118 ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt :
num [1:2] 117.1 23.4 .. .. ..@ area : num 0.00752 .. .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 117.1 116.9 117.1 117.1 23.4 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2]
121.4 39.4 .. .. ..@ area : num 0.0075 .. .. ..@ hole : logi FALSE .. .. ..@
ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 121.4 121.3 121.4 121.4 39.4 ... .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 113.5 22.8
.. .. ..@ area : num 0.00744 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir:
```

```

int 1 .. .. .. ..@ coords : num [1:4, 1:2] 113.6 113.4 113.5 113.6 22.8 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 122.1 29.7 .. .. ..
.. ..@ area : num 0.00743 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 122.1 122.2 122 122.1 29.8 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 121.2 28.1 .. .. .. ..@ area :
num 0.00706 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] 121 121 121 121 28 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] 112.8 21.7 .. .. .. ..@ area : num 0.00688 .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
112.8 112.7 112.9 112.8 21.7 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] 122.2 30.3 .. .. .. ..@ area : num 0.00671 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 122.2
122.1 122.2 122.2 30.2 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 111.9 21.6 .. .. .. ..@ area : num 0.00628 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 111.8 111.8 112
111.8 21.6 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 110.6 21.2 .. .. .. ..@ area : num 0.00553 .. .. .. ..@ hole : logi FALSE ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 110.5 110.6 110.5 110.5 21.2 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
122.4 29.9 .. .. .. ..@ area : num 0.00489 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 122.4 122.4 122.3 122.4 29.9 ... .. .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 121.9 29.1 ..
.. .. ..@ area : num 0.0038 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] 121.9 121.9 121.9 121.9 29.1 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 112.6 21.6 .. .. .. ..@
area : num 0.0036 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 112.5 112.6 112.6 112.5 21.6 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 121.8 31.3 .. .. .. ..@ area : num
0.00321 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 121.8 121.8 121.9 121.8 31.3 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] 119.3 25.5 .. .. .. ..@ area : num 0.00317 .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
119.3 119.3 119.3 119.3 25.4 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] 122.3 30.4 .. .. .. ..@ area : num 0.00307 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 122.4
122.3 122.3 122.4 30.4 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 113.3 22.1 .. .. .. ..@ area : num 0.00288 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 113.3 113.3 113.4
113.3 22.1 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 113 22 .. .. .. ..@ area : num 0.00285 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 113 113 113 113 22 ... .. .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 113.5 22.7
.. .. .. ..@ area : num 0.00283 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 113.6 113.5 113.5 113.6 22.7 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 122 30 .. .. .. ..
..@ area : num 0.00243 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 122 122 122 122 30 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 110.6 20.9 .. .. .. ..@ area : num 0.00193

```

```
... ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:4, 1:2] 110.6 110.5 110.6 20.9 ... ..@ labpt : num [1:2] 109 21 .. ..@ area : num 0.001 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 109.1
109.1 109.1 109.1 21.1 ... ..@ labpt : num [1:2] 119 26 .. ..@ area : num 0.000676 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 119 119 119 119 26
... ..@ labpt : num [1:2] 108.3 21.7 .. ..@ area : num 0.000104 .. ..@ hole : logi TRUE .. ..@
ringDir: int -1 .. ..@ coords : num [1:4, 1:2] 108.3 108.3 108.3 21.7 ... ..@ labpt : num [1:2] 116.7 20.7 ..
... ..@ area : num 5.53e-05 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:4, 1:2] 116.7 116.7 116.7 20.7 ... ..@ labpt : num [1:2] 110.5 19.1 .. ..@
area : num 3.32e-05 .. ..@ hole : logi TRUE .. ..@ ringDir: int -1 .. ..@
coords : num [1:4, 1:2] 110.5 110.5 110.5 19.1 ... ..@ plotOrder: int [1:34] 1 2 3 4
5 6 7 8 9 10 ... ..@ labpt : num [1:2] 103.8 36.6 .. ..@ ID : chr "CHN" .. ..@ area :
num 950 .. ..@ Polygons :List of 1 ..
... ..@ labpt : num [1:2] 66
33.9 .. ..@ area : num 62.4 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:54, 1:2] 74.9 74.4 74.6 72.6 71.2 ... ..@ plotOrder:
int 1 .. ..@ labpt : num [1:2] 66 33.9 .. ..@ ID : chr "AFG" .. ..@ area : num 62.4 ..
..@ Polygons :List of 1 ..
..@ labpt : num [1:2] 90.5 27.4 ..
..@ area : num 3.66 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
..@ coords : num [1:11, 1:2] 90.5 91.3 91.7 92.1 92.1 ... ..@ plotOrder: int 1 ..
..@ labpt : num [1:2] 90.5 27.4 .. ..@ ID : chr "BTN" .. ..@ area : num 3.66 .. ..@ Polygons :List of 148 ..
..@ labpt : num [1:2] -71.2 -35.1 .. ..@
area : num 64.4 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:204, 1:2] -69.5 -69.1 -68.9 -68.4 -68.8 ... ..@ labpt : num [1:2] -69.5 -53.7 .. ..@ area :
num 3.31 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:29, 1:2] -70.9 -70.8 -70.9 -70.9 -72 ... ..@ labpt : num [1:2] -73.9 -42.7 .. ..@ area : num 0.886 ..
..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:13,
1:2] -73.9 -73.5 -73.4 -73.7 -73.6 ... ..@ labpt : num [1:2] -74.8 -49.3 .. ..@ area : num 0.698 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:16, 1:2] -74.6
-74.4 -74.8 -74.9 -74.6 ... ..@ labpt : num [1:2] -68.9 -55.3 .. ..@ area : num 0.448 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:12, 1:2] -68.4 -69.1 -68.2
-68.7 -68.2 ... ..@ labpt : num [1:2] -72.8 -53.8 .. ..@ area : num 0.408 .. ..@ hole : logi FALSE ..
..@ ringDir: int 1 .. ..@ coords : num [1:10, 1:2] -72.9 -72.9 -72.8 -72.1 -72.9 ...
..@ labpt : num [1:2]
-67.8 -55.1 .. ..@ area : num 0.238 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:5, 1:2] -67.8 -67.1 -68.1 -68.4 -67.8 ... ..@
```

```

:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -73.1 -44.6 ..
.. .. .@ area : num 0.213 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1
.. .. .@ coords : num [1:11, 1:2] -72.7 -72.8 -73 -72.8 -73.1 ... .. .$.:Formal class
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -71.3 -54.2 .. .. .@
area : num 0.111 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@
coords : num [1:5, 1:2] -71.3 -71 -71.1 -71.7 -71.3 ... .. .$.:Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .@ labpt : num [1:2] -70.6 -53.9 .. .. .@ area : num 0.107
.. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num
[1:6, 1:2] -70.4 -70.7 -70.5 -70.9 -70.5 ... .. .$.:Formal class 'Polygon' [package "sp"] with
5 slots .. .. .@ labpt : num [1:2] -75.4 -48.4 .. .. .@ area : num 0.0752 .. .. .
.. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2]
-75.2 -75.2 -75.6 -75.2 -48.3 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .@ labpt : num [1:2] -74.6 -51 .. .. .@ area : num 0.075 .. .. .@ hole :
logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:6, 1:2] -74.4 -74.4
-74.5 -74.7 -75 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@
labpt : num [1:2] -72 -54.1 .. .. .@ area : num 0.067 .. .. .@ hole : logi FALSE ..
.. .. .@ ringDir: int 1 .. .. .@ coords : num [1:5, 1:2] -71.7 -72 -71.8 -72.3 -71.7 ...
.. .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2]
-73.9 -45.1 .. .. .@ area : num 0.0639 .. .. .@ hole : logi FALSE .. .. .@
ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -73.8 -73.7 -74.2 -73.8 -45 ... .. .$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -74.4 -50.7
.. .. .@ area : num 0.0576 .. .. .@ hole : logi FALSE .. .. .@ ringDir:
int 1 .. .. .@ coords : num [1:6, 1:2] -74.4 -74.2 -74.5 -74.4 -74.7 ... .. .$.:Formal class
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -75.1 -48.2 .. .. .
.. .. .@ area : num 0.0527 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .
.. .. .@ coords : num [1:4, 1:2] -74.9 -75 -75.3 -74.9 -48.2 ... .. .$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -69.6 -55 .. .. .@ area : num
0.0484 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords
: num [1:4, 1:2] -69.8 -69.9 -69.2 -69.8 -55 ... .. .$.:Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .@ labpt : num [1:2] -74.1 -53 .. .. .@ area : num 0.0441 .. .. .
.. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2]
-74.4 -74.7 -73.1 -74.4 -52.9 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .@ labpt : num [1:2] -73.9 -52.6 .. .. .@ area : num 0.0428 .. .. .@ hole
: logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -73.8 -74.1
-73.7 -73.8 -52.7 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@
labpt : num [1:2] -75.3 -50.7 .. .. .@ area : num 0.0423 .. .. .@ hole : logi FALSE
.. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -75.1 -75.3 -75.5 -75.1 -50.5
.. .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2]
-75 -45.9 .. .. .@ area : num 0.0416 .. .. .@ hole : logi FALSE .. .. .@
ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] -74.7 -75.1 -75.1 -74.7 -45.9 ... .. .$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -74.8 -51.3 ..
.. .. .@ area : num 0.0413 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int
1 .. .. .@ coords : num [1:4, 1:2] -74.5 -75 -74.8 -74.5 -51.3 ... .. .$.:Formal class
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -75.4 -49.8 .. .. .
.. .. .@ area : num 0.0404 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .
.. .. .@ coords : num [1:4, 1:2] -75.3 -75.2 -75.6 -75.3 -49.7 ... .. .$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] -75.2 -51.4 .. .. .@ area :
num 0.0394 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@

```

```

coords : num [1:4, 1:2] -75 -75.3 -75.2 -75 -51.4 ... ..$. :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] -74.9 -51.9 .. ..@ area : num 0.0392
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:4, 1:2] -74.8 -75 -74.9 -74.8 -51.8 ... ..$. :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] -75 -49.2 .. ..@ area : num 0.0384 .. ..
..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.9
-75.2 -75 -74.9 -49.3 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
..@ labpt : num [1:2] -74.4 -45.6 .. ..@ area : num 0.0368 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.5 -74.4 -74.2
-74.5 -45.8 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] -75 -48 .. ..@ area : num 0.0352 .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.8 -74.9 -75.3 -74.8 -47.9 ...
..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-75.1 -50.2 .. ..@ area : num 0.0352 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:6, 1:2] -75 -74.8 -75.5 -75.1 -75.4 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -74.2 -44.7 ..
..@ area : num 0.035 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1
.. ..@ coords : num [1:4, 1:2] -74.2 -74.4 -73.9 -74.2 -44.8 ... ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -75.4 -49 .. ..@
area : num 0.0325 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:6, 1:2] -75.3 -75.3 -75.3 -75.5 -75.7 ... ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -70.7 -55 .. ..@ area : num
0.0315 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:6, 1:2] -70.5 -70.7 -70.3 -71 -70.3 ... ..$. :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] -75.5 -48.6 .. ..@ area : num 0.0314 .. ..
..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
-75.3 -75.6 -75.7 -75.3 -48.6 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
..@ labpt : num [1:2] -74.1 -51.7 .. ..@ area : num 0.0298 .. ..@ hole
: logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.1 -73.9
-74.2 -74.1 -51.6 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@
labpt : num [1:2] -72.3 -54.2 .. ..@ area : num 0.0278 .. ..@ hole : logi FALSE
.. ..@ ringDir: int 1 .. ..@ coords : num [1:5, 1:2] -72.3 -72.5 -72.3 -72.2 -72.3
... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-75.4 -49.1 .. ..@ area : num 0.0255 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -75.3 -75.7 -75.4 -75.3 -49.1 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -73.9 -43.8 ..
..@ area : num 0.0253 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1
.. ..@ coords : num [1:4, 1:2] -73.9 -73.8 -74.2 -73.9 -43.8 ... ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -74.2 -45 .. ..@
area : num 0.0252 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:4, 1:2] -74 -74.4 -74.2 -74 -45 ... ..$. :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] -73.9 -52.1 .. ..@ area : num 0.023
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:4, 1:2] -73.7 -74.1 -73.8 -73.7 -52.2 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] -74.7 -51.9 .. ..@ area : num 0.0229 .. ..
..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
-74.9 -74.7 -74.6 -74.9 -52.1 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
..@ labpt : num [1:2] -74.2 -52.2 .. ..@ area : num 0.0229 .. ..@ hole

```

```

: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -74.2 -73.9
-74.4 -74.2 -52.1 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] -73.9 -52.3 .. .. .. ..@ area : num 0.0212 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -73.8 -74.1 -73.8
-73.8 -52.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -67.4 -55.7 .. .. .. ..@ area : num 0.0207 .. .. .. ..@ hole : logi FALSE .. ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -67.3 -67.6 -67.4 -67.3 -55.7 ...
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-74.8 -50.8 .. .. .. ..@ area : num 0.0203 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -74.7 -75 -74.7 -74.7 -50.9 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -74.2 -51.8
.. .. .. ..@ area : num 0.02 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] -74.1 -74.5 -74.1 -74.1 -52 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -74 -45.6 .. .. .. ..@
area : num 0.0197 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:5, 1:2] -74 -74.1 -74 -73.9 -74 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -73.7 -45.6 .. .. .. ..@ area : num 0.0191
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] -73.6 -73.8 -73.7 -73.6 -45.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -74.4 -48.4 .. .. .. ..@ area : num 0.0181 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -74.3
-74.5 -74.3 -74.3 -48.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] -73.8 -46.1 .. .. .. ..@ area : num 0.0177 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -73.8 -73.9 -73.7
-73.8 -46.2 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -73.6 -53.5 .. .. .. ..@ area : num 0.0175 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -73.5 -73.5 -73.8 -73.5 -53.5
... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] -74 -45.5 .. .. .. ..@ area : num 0.0172 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -74 -73.8 -74.1 -74 -45.4 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -75.2 -48.9 ..
.. .. .. ..@ area : num 0.0169 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] -75.2 -75.3 -75.1 -75.2 -49 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -75.4 -48.7 .. .. .. ..
..@ area : num 0.0163 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] -75.3 -75.7 -75.3 -75.3 -48.7 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -74.1 -47.1 .. .. .. ..@ area :
num 0.015 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] -74.2 -74.2 -74 -74.2 -47.2 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -73.7 -44.7 .. .. .. ..@ area : num 0.0146
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] -73.7 -73.7 -73.6 -73.7 -44.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -75.1 -48.7 .. .. .. ..@ area : num 0.0143 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-75.1 -75.2 -75.1 -75.1 -48.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] -74.5 -51.1 .. .. .. ..@ area : num 0.0136 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -74.4 -74.6
-74.5 -74.4 -51.2 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..

```


..@ labpt : num [1:2] -74.3 -51.1@ area : num 0.0133@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.3 -74.3 -74.2 -74.3 -51.2\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.4 -49.5@ area : num 0.0131@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.3 -74.4 -74.4 -74.3 -49.6\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -73.5 -52.9@ area : num 0.0129@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -73.4 -73.4 -73.8 -73.4 -52.9\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -75.2 -47.8@ area : num 0.0128@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -75.1 -75.3 -75.1 -75.1 -47.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -67.7 -55.9@ area : num 0.0121@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -67.5 -67.6 -67.9 -67.5 -55.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.7 -50.4@ area : num 0.0117@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.7 -74.8 -74.5 -74.7 -50.5\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.5 -48.3@ area : num 0.0117@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.4 -74.5 -74.6 -74.4 -48.3\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -73.3 -54.1@ area : num 0.0114@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -73.2 -73.5 -73.2 -73.2 -54.1\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -109.4 -27.1@ area : num 0.0114@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -109.2 -109.4 -109.4 -109.2 -27.1\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -73.8 -53.5@ area : num 0.0108@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -73.8 -73.9 -73.7 -73.8 -53.6\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -71.2 -54.9@ area : num 0.0105@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -71.1 -70.9 -71.5 -71.1 -54.9\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -73.5 -42.4@ area : num 0.0103@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -73.4 -73.7 -73.5 -73.4 -42.6\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -73.8 -45.9@ area : num 0.0102@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -73.7 -73.9 -73.9 -73.7 -45.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -66.9 -55.3@ area : num 0.0102@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -66.9 -67.1 -66.9 -66.9 -55.3\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.6 -45.7@ area : num 0.00988@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.6 -74.7 -74.5 -74.6 -45.8\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.7 -52.3@ area : num 0.00965@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -74.7 -74.8 -74.6 -74.7 -52.3\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -74.4 -48.5@ area : num 0.0095@ hole : logi FALSE@ ringDir: int 1

```

.. ..@ coords : num [1:4, 1:2] -74.4 -74.5 -74.3 -74.4 -48.5 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -74 -51.3 .. ..@ area : num
0.00943 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:4, 1:2] -74 -74.1 -74 -74 -51.4 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] -72.4 -54.4 .. ..@ area : num 0.00922 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
-72.3 -72.5 -72.5 -72.3 -54.4 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. ..@ labpt : num [1:2] -70.3 -54.2 .. ..@ area : num 0.0092 .. ..@ hole
: logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -70.3 -70.5
-70.2 -70.3 -54.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -66.9 -55 .. ..@ area : num 0.00915 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -66.8 -67.1 -66.9
-66.8 -55.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] -66.5 -55.2 .. ..@ area : num 0.00887 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -66.6 -66.6 -66.4 -66.6 -55.3 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-74.4 -45.3 .. ..@ area : num 0.00869 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.3 -74.5 -74.4 -74.3 -45.4 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -74.4 -47.1 ..
.. ..@ area : num 0.00831 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:4, 1:2] -74.5 -74.5 -74.3 -74.5 -47.2 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -74 -44.4 .. ..@
area : num 0.00806 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -73.9 -74.1 -73.9 -73.9 -44.4 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -73.2 -43.9 .. ..@ area :
num 0.00805 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] -73.2 -73.3 -73.1 -73.2 -44 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] -74.2 -51.3 .. ..@ area : num 0.008
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:4, 1:2] -74.1 -74.3 -74.2 -74.1 -51.5 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] -75 -51.8 .. ..@ area : num 0.00778 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -75.1
-75.1 -75 -75.1 -51.9 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -74.9 -48.7 .. ..@ area : num 0.00769 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -75 -75 -74.8
-75 -48.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] -74.6 -52 .. ..@ area : num 0.00758 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.7 -74.6 -74.5 -74.7 -52.1 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-74.8 -43.6 .. ..@ area : num 0.00751 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -74.6 -74.8 -74.9 -74.6 -43.6 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -73.9 -44.9 ..
.. ..@ area : num 0.00745 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:4, 1:2] -73.8 -73.9 -73.9 -73.8 -45 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -74.1 -44.8 .. ..@
area : num 0.00741 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -74 -74.2 -74 -74 -44.9 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] -74.4 -44.8 .. ..@ area : num 0.00738

```

```
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num
[1:4, 1:2] -74.4 -74.5 -74.4 -44.9 ...$ :Formal class 'Polygon' [package "sp"] with
5 slots ...@ labpt : num [1:2] -74.4 -44.5 ...@ area : num 0.00737 ...
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2]
-74.4 -74.5 -74.2 -74.4 -44.5 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...
...@ labpt : num [1:2] -74 -44.5 ...@ area : num 0.00732 ...@ hole :
logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -74 -74.1 -74
-74 -44.6 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt
: num [1:2] -78.9 -33.6 ...@ area : num 0.00729 ...@ hole : logi FALSE ..
...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -78.8 -79 -78.9 -78.8 -33.6 ...
...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2]
-73.8 -46 ...@ area : num 0.0071 ...@ hole : logi FALSE ...@
ringDir: int 1 ...@ coords : num [1:4, 1:2] -73.7 -73.8 -73.7 -46 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] -73.8 -51.3
...@ area : num 0.00698 ...@ hole : logi FALSE ...@ ringDir:
int 1 ...@ coords : num [1:4, 1:2] -73.8 -73.9 -73.8 -73.8 -51.4 ...$ :Formal
class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] -73.7 -44.8 ...
...@ area : num 0.00694 ...@ hole : logi FALSE ...@ ringDir: int 1 ...
...@ coords : num [1:4, 1:2] -73.7 -73.7 -73.6 -73.7 -44.8 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ...@ labpt : num [1:2] -75 -50.7 ...@ area : num
0.00689 ...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords
: num [1:4, 1:2] -75 -75.1 -75 -75 -50.8 ...$ :Formal class 'Polygon' [package "sp"] with
5 slots ...@ labpt : num [1:2] -74.7 -52.1 ...@ area : num 0.00688 ...
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2]
-74.8 -74.8 -74.6 -74.8 -52.2 ... [list output truncated] ...@ plotOrder: int [1:148]
1 2 3 4 5 6 7 8 9 10 ...@ labpt : num [1:2] -71.2 -35.1 ...@ ID : chr "CHL" ...
...@ area : num 72.9 ...$ :Formal class 'Polygons' [package "sp"] with 5 slots ...@ Polygons
:List of 3 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt :
num [1:2] -81.3 19.3 ...@ area : num 0.00845 ...@ hole : logi FALSE ..
...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -81.1 -81.4 -81.3 -81.1 19.3 ...
...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2]
-80 19.7 ...@ area : num 0.00226 ...@ hole : logi FALSE ...@
ringDir: int 1 ...@ coords : num [1:4, 1:2] -80.1 -80.1 -80 -80.1 19.7 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] -79.8 19.7 ..
...@ area : num 0.00126 ...@ hole : logi FALSE ...@ ringDir:
int 1 ...@ coords : num [1:4, 1:2] -79.9 -79.9 -79.7 -79.9 19.7 ...@ plotOrder:
int [1:3] 1 2 3 ...@ labpt : num [1:2] -81.3 19.3 ...@ ID : chr "CYM" ...@ area :
num 0.012 ...$ :Formal class 'Polygons' [package "sp"] with 5 slots ...@ Polygons :List of 2
...$ :Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2]
12.73 5.64 ...@ area : num 38.3 ...@ hole : logi FALSE ...
...@ ringDir: int 1 ...@ coords : num [1:38, 1:2] 14.6 15 15.1 15.7 14.2 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 9.65 3.57 ..
...@ area : num 0.000647 ...@ hole : logi FALSE ...@ ringDir: int
1 ...@ coords : num [1:4, 1:2] 9.69 9.63 9.64 9.69 3.57 ...@ plotOrder: int [1:2]
1 2 ...@ labpt : num [1:2] 12.73 5.64 ...@ ID : chr "CMR" ...@ area : num 38.3 ..
...$ :Formal class 'Polygons' [package "sp"] with 5 slots ...@ Polygons :List of 1 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] 18.7 15.3 ..
...@ area : num 107 ...@ hole : logi FALSE ...@ ringDir: int 1 ..
```

```

... ..@ coords : num [1:35, 1:2] 14.5 14.1 13.6 13.5 15.5 ... ..@ plotOrder: int 1 ... ..
..@ labpt : num [1:2] 18.7 15.3 .. ..@ ID : chr "TCD" .. ..@ area : num 107 ... ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 3 .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 43.3 -11.7 .. ..@
..@ area : num 0.0513 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 43.5 43.2 43.3 43.5 -11.9 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] 44.4 -12.2 .. ..@ area : num
0.0412 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords :
num [1:4, 1:2] 44.5 44.5 44.2 44.5 -12.1 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] 43.7 -12.3 .. ..@ area : num 0.00955 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4,
1:2] 43.9 43.7 43.6 43.9 -12.4 ... ..@ plotOrder: int [1:3] 1 2 3 .. ..@ labpt : num [1:2]
43.3 -11.7 .. ..@ ID : chr "COM" .. ..@ area : num 0.102 .. ..$ :Formal class 'Polygons'
[package "sp"] with 5 slots .. ..@ Polygons :List of 11 .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -73.05 3.89 .. ..@ area :
num 92.5 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords
: num [1:84, 1:2] -71.6 -71.1 -71.3 -72 -72.2 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] -77.43 4.26 .. ..@ area : num 0.0124 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4,
1:2] -77.54 -77.43 -77.32 -77.54 4.19 ... ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] -78.15 2.58 .. ..@ area : num 0.0106 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:6, 1:2]
-78.1 -78.2 -78.2 -78.1 -78.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -77.59 3.12 .. ..@ area : num 0.00671 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -77.57
-77.66 -77.53 -77.57 3.07 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -77.82 2.66 .. ..@ area : num 0.00622 .. ..@ hole
: logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:6, 1:2] -77.8 -77.8
-77.9 -77.8 -77.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -77.99 2.59 .. ..@ area : num 0.00596 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:6, 1:2] -78 -78 -78 -77.9
-78 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] -77.86 2.62 .. ..@ area : num 0.00487 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -77.86 -77.92 -77.79 -77.86 2.57 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-77.49 4.15 .. ..@ area : num 0.00354 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -77.45 -77.54 -77.49 -77.45 4.07 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-81.7 12.5 .. ..@ area : num 0.00112 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -81.7 -81.7 -81.7 -81.7 12.5 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -81.4 13.3 ..
.. ..@ area : num 0.000733 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:4, 1:2] -81.4 -81.4 -81.4 -81.4 13.3 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -78.55 2.42 .. ..
.. ..@ area : num 0.000146 .. ..@ hole : logi TRUE .. ..@ ringDir: int -1 .. ..
.. ..@ coords : num [1:5, 1:2] -78.5 -78.5 -78.6 -78.6 -78.5 ... ..@ plotOrder: int [1:11] 1 2
3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] -73.05 3.89 .. ..@ ID : chr "COL" .. ..@ area
: num 92.6 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 2

```

```
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-84.1 9.91 .. .. .. ..@ area : num 4.55 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:23, 1:2] -85.1 -83.9 -83.6 -82.6 -82.9 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -85.2 10.1 ..
.. .. .. ..@ area : num 0.00302 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:6, 1:2] -85.1 -85.2 -85.2 -85.1 ... .. .. ..@ plotOrder: int
[1:2] 1 2 .. .. .. ..@ labpt : num [1:2] -84.1 9.91 .. .. .. ..@ ID : chr "CRI" .. .. .. ..@ area : num 4.55
.. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 1 .. .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 20.47 6.56 ..
.. .. .. ..@ area : num 50.4 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:36, 1:2] 19.1 19 20.4 21.7 21.7 ... .. .. ..@ plotOrder: int 1 .. ..
..@ labpt : num [1:2] 20.47 6.56 .. .. .. ..@ ID : chr "CAF" .. .. .. ..@ area : num 50.4 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 26 .. .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -78.9 21.6 .. .. .. ..
.. ..@ area : num 8.69 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:37, 1:2] -82 -81.6 -81.5 -81.2 -81.3 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -82.9 21.7 .. .. .. ..@ area : num
0.141 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:7, 1:2] -82.5 -82.9 -83.2 -82.9 -83.1 ... .. .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] -78.5 22.5 .. .. .. ..@ area : num 0.0208 .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-78.3 -78.4 -78.7 -78.3 22.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -78.1 22.4 .. .. .. ..@ area : num 0.0151 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -78.1 -78 -78.3
-78.1 22.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] -77.7 22 .. .. .. ..@ area : num 0.0151 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -77.9 -77.7 -77.6 -77.9 22.1 ... .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -78 22.2
.. .. .. ..@ area : num 0.0116 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] -77.8 -78 -78 -77.8 22.1 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -79.5 22.7 .. .. .. ..@
area : num 0.00677 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] -79.3 -79.6 -79.6 -79.3 22.6 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -81.5 21.6 .. .. .. ..@ area : num
0.0033 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] -81.5 -81.6 -81.4 -81.5 21.6 ... .. .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] -79.2 21 .. .. .. ..@ area : num 0.00307 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-79.1 -79.2 -79.2 -79.1 20.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -78.4 20.6 .. .. .. ..@ area : num 0.00281 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -78.3 -78.5
-78.3 -78.3 20.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] -80.3 23 .. .. .. ..@ area : num 0.00224 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -80.2 -80.2 -80.3 -80.2 23 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-75.5 20.8 .. .. .. ..@ area : num 0.00214 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -75.5 -75.6 -75.5 -75.5 20.7 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -78.9 20.8 ..
```

```

... ..@ area : num 0.00208 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -78.8 -79 -78.9 -78.8 20.8 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -79 20.9 ... ..@
area : num 0.00195 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] -79 -79.1 -79 -79 20.8 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] -79 22.7 ... ..@ area : num 0.00134 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] -79 -79.1 -79 -79 22.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -79.9 22.9 ... ..@ area : num 0.00132 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -79.9 -80 -79.9
-79.9 22.9 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -79.3 21.1 ... ..@ area : num 0.00124 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -79.3 -79.4 -79.3 21.1 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-80.2 23.1 ... ..@ area : num 0.00124 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -80.1 -80.2 -80.2 -80.1 23.1 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -78.5 20.7 ..
... ..@ area : num 0.00118 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -78.4 -78.5 -78.5 -78.4 20.7 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -80.5 23.2 ... ..@
area : num 0.00107 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] -80.5 -80.6 -80.6 -80.5 23.2 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -78.8 20.7 ... ..@ area : num
0.000764 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -78.8 -78.8 -78.8 -78.8 20.7 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -77.8 22.2 ... ..@ area : num 0.000703 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] -77.8 -77.8 -77.9 -77.8 22.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -80.9 23.1 ... ..@ area : num 6e-04 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -80.9 -80.8 -81
-80.9 23.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -78.4 20.7 ... ..@ area : num 0.000478 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -78.4 -78.4 -78.4 -78.4 20.6 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-80.1 23 ... ..@ area : num 0.000456 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -80 -80.1 -80.1 -80 23 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -79.4 21.1 ... ..
... ..@ area : num 0.000402 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -79.4 -79.5 -79.4 -79.4 21.1 ... ..@ plotOrder: int [1:26] 1
2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] -78.9 21.6 ... ..@ ID : chr "CUB" ... ..@
area : num 8.93 ... ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..@ Polygons :List
of 6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] -23.6 15.1 ... ..@ area : num 0.0393 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -23.4 -23.7 -23.8 -23.4 15 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -25.2 17
... ..@ area : num 0.033 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -25.3 -25.3 -25 -25.3 16.9 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -24.3 16.6 ... ..

```

```
..@ area : num 0.0293 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. .. ..@ coords : num [1:4, 1:2] -24 -24.3 -24.4 -24 16.6 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -22.8 16.1 .. .. .. ..@ area : num
0.0226 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] -22.7 -23 -22.8 -22.7 16 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -24.4 14.9 .. .. .. ..@ area : num 0.0177 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-24.4 -24.5 -24.4 -24.4 14.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -25 16.9 .. .. .. ..@ area : num 0.01 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -24.9 -25.1 -24.9
-24.9 16.8 ... .. .. ..@ plotOrder: int [1:6] 1 2 3 4 5 6 .. .. ..@ labpt : num [1:2] -23.6 15.1 ..
.. .. ..@ ID : chr "CPV" .. .. ..@ area : num 0.152 .. ..$ :Formal class 'Polygons' [package "sp"]
with 5 slots .. .. ..@ Polygons :List of 15 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -159.8 -21.2 .. .. .. ..@ area : num 0.0025 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -159.7 -159.8 -159.8 -159.7 -21.3 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -157.9 -21.9 .. .. .. ..@ area : num 0.00155 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -157.9 -158 -157.9 -157.9 -21.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] -157.7 -19.8 .. .. .. ..@ area : num 0.00125 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -157.7 -157.7 -157.7 -157.7 -19.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -158 -20 .. .. .. ..@ area : num 0.000648 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-158 -158 -158 -158 -20 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -157.3 -20.2 .. .. .. ..@ area : num 0.000517 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -157.3 -157.3
-157.3 -157.3 -20.2 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -157.97 -8.97 .. .. .. ..@ area : num 0.000457 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -157.94 -157.97
-158.01 -157.94 -8.98 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -159.8 -18.9 .. .. .. ..@ area : num 0.000429 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -159.8 -159.8
-159.8 -159.8 -18.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -161 -10.4 .. .. .. ..@ area : num 0.000366 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -161 -161 -161
-161 -10.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -161 -10 .. .. .. ..@ area : num 0.000248 .. .. .. ..@ hole : logi FALSE ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -161 -161 -161 -161 -10 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-161 -10.4 .. .. .. ..@ area : num 0.000246 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -161 -161 -161 -161 -10.4 ... ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -158.3
-19.8 .. .. .. ..@ area : num 0.000244 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -158.3 -158.3 -158.3 -158.3 -19.8 ... ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -158.9
-19.3 .. .. .. ..@ area : num 0.000231 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -158.9 -158.9 -159 -158.9 -19.3 ... .. ..
```

```

..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -163.2
-18.1 .. .. .. .. ..@ area : num 0.000158 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -163.2 -163.2 -163.2 -163.2 -18.1 ... .. ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -165.8
-10.9 .. .. .. .. ..@ area : num 0.000125 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -165.8 -165.9 -165.8 -165.8 -10.9 ... .. ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -165.4
-11.5 .. .. .. .. ..@ area : num 0.000111 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -165.4 -165.4 -165.4 -165.4 -11.5 ... .. ..
..@ plotOrder: int [1:15] 1 2 3 4 5 6 7 8 9 10 ... .. .. .. ..@ labpt : num [1:2] -159.8 -21.2 ... .. ..@
ID : chr "COK" .. .. .. .. ..@ area : num 0.00909 .. ..$ :Formal class 'Polygons' [package "sp"] with 5
slots .. .. .. .. ..@ Polygons :List of 1 .. .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. .. ..@ labpt : num [1:2] 33.3 35 .. .. .. .. ..@ area : num 0.861 .. .. .. .. ..@ hole
: logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:7, 1:2] 33.7 34.6
33.9 34.1 33 ... .. .. ..@ plotOrder: int 1 .. .. .. .. ..@ labpt : num [1:2] 33.3 35 .. .. .. ..@ ID : chr
"CYP" .. .. .. .. ..@ area : num 0.861 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..
.. ..@ Polygons :List of 18 .. .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 9.26 56.02 .. .. .. .. ..@ area : num 3.38 .. .. .. .. ..@ hole : logi
FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:28, 1:2] 9.97 10.31 10.31
9.87 10.96 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt
: num [1:2] 11.8 55.5 .. .. .. .. ..@ area : num 1.06 .. .. .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:10, 1:2] 12.6 12.2 12.5 12.1 11.2 ... .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 9.56 57.2
.. .. .. .. ..@ area : num 0.737 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1
.. .. .. .. ..@ coords : num [1:13, 1:2] 10.43 10.34 10.01 9.24 9.12 ... .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 10.3 55.3 .. .. .. .. ..@
area : num 0.406 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@
coords : num [1:16, 1:2] 10.7 10.8 10.5 10.2 10.1 ... .. .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 11.9 54.8 .. .. .. .. ..@ area : num 0.0561 ..
.. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4,
1:2] 12 12 11.7 12 54.9 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 11.5 54.8 .. .. .. .. ..@ area : num 0.045 .. .. .. .. ..@ hole : logi
FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] 11.5 11.9 11 11.5
54.8 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num
[1:2] 14.8 55.1 .. .. .. .. ..@ area : num 0.0399 .. .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] 15.1 14.7 14.7 15.1 55 ... .. .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 8.73 56.78 ..
.. .. .. .. ..@ area : num 0.033 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int
1 .. .. .. .. ..@ coords : num [1:4, 1:2] 8.92 8.77 8.51 8.92 56.92 ... .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 10.8 54.9 .. .. .. .. ..@
area : num 0.027 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@
coords : num [1:4, 1:2] 10.8 10.7 10.9 10.8 54.8 ... .. .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 12.3 55 .. .. .. .. ..@ area : num 0.0231 .. ..
.. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4,
1:2] 12.6 12.1 12.3 12.6 55 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 9.83 55 .. .. .. .. ..@ area : num 0.0198 .. .. .. .. ..@ hole
: logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] 9.79 10.07
9.63 9.79 55.07 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@

```


labpt : num [1:2] 10.6 55.9@ area : num 0.0113@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 10.6 10.5 10.5 10.6 55.9 ...
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
11 57.3@ area : num 0.0102@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] 11.2 11 10.9 11.2 57.3\$. :Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 12.6 55.6
..@ area : num 0.00665@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] 12.6 12.6 12.7 12.6 55.6\$. :Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] 10.6 55@ area : num
0.00589@ hole : logi FALSE@ ringDir: int 1@ coords
: num [1:4, 1:2] 10.6 10.5 10.6 10.6 55\$. :Formal class 'Polygon' [package "sp"] with
5 slots@ labpt : num [1:2] 8.43 55.41@ area : num 0.00444
.. .. .@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2]
8.46 8.36 8.46 8.46 55.33\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] 10.3 54.9@ area : num 0.0044@ hole :
logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 10.4 10.2 10.2
10.4 54.8\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] 11.6 56.7@ area : num 0.00316@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] 11.6 11.5 11.6 11.6 56.7
... .. .@ plotOrder: int [1:18] 1 2 3 4 5 6 7 8 9 10@ labpt : num [1:2] 9.26 56.02 ..
.. .. .@ ID : chr "DNK"@ area : num 5.87\$. :Formal class 'Polygons' [package "sp"]
with 5 slots@ Polygons :List of 1\$. :Formal class 'Polygon' [package "sp"] with
5 slots@ labpt : num [1:2] 42.6 11.8@ area : num 1.79
..@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:10, 1:2] 42.9
43.2 42.9 41.8 41.8@ plotOrder: int 1@ labpt : num [1:2] 42.6 11.8@
ID : chr "DJJ"@ area : num 1.79\$. :Formal class 'Polygons' [package "sp"] with 5 slots
.. .. .@ Polygons :List of 1\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] -61.4 15.4@ area : num 0.0356@ hole
: logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -61.4 -61.5
-61.3 -61.4 15.2@ plotOrder: int 1@ labpt : num [1:2] -61.4 15.4@ ID :
chr "DMA"@ area : num 0.0356\$. :Formal class 'Polygons' [package "sp"] with 5 slots
.. .. .@ Polygons :List of 3\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] -70.5 18.9@ area : num 4.02@ hole : logi
FALSE@ ringDir: int 1@ coords : num [1:18, 1:2] -70.8 -69.9 -69.8
-69.2 -69.6\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] -68.7 18.1@ area : num 0.00615@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] -68.6 -68.7 -68.8 -68.6 18.1 ...
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
-71.5 17.6@ area : num 0.00239@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] -71.5 -71.5 -71.5 -71.5 17.5@
plotOrder: int [1:3] 1 2 3@ labpt : num [1:2] -70.5 18.9@ ID : chr "DOM"
..@ area : num 4.03\$. :Formal class 'Polygons' [package "sp"] with 5 slots@ Polygons
:List of 14\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] -78.4 -1.45@ area : num 20.3@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:29, 1:2] -78.6 -77.4 -76.2 -75.3 -75.6
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -91.167
-0.445@ area : num 0.259@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:6, 1:2] -91.2 -90.8 -91.4 -91.1 -91.6\$. :

```

:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -80.1 -2.83 ..
.. .. .. ..@ area : num 0.0472 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] -80.19 -80.21 -79.9 -80.19 -3.03 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -90.329 -0.626 .. ..
.. .. .. ..@ area : num 0.0345 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -90.261 -90.535 -90.191 -90.261 -0.751 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -89.44 -0.85 .. ..
.. .. .. ..@ area : num 0.024 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -89.444 -89.629 -89.259 -89.444 -0.937 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -91.545 -0.353 .. ..
.. .. .. ..@ area : num 0.023 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -91.499 -91.664 -91.471 -91.499 -0.496 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -90.738 -0.241 .. ..
.. .. .. ..@ area : num 0.0211 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -90.548 -90.874 -90.793 -90.548 -0.305 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -90.43 -1.28 .. ..
.. .. .. ..@ area : num 0.0067 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] -90.43 -90.48 -90.37 -90.43 -1.36 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -78.94 1.29 .. ..
.. .. .. ..@ area : num 0.00573 .. .. .. ..@ hole : logi TRUE .. .. .. ..@ ringDir: int -1
.. .. .. ..@ coords : num [1:4, 1:2] -78.91 -78.9 -79 -78.91 1.24 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -90.467 0.313 .. ..
.. .. .. ..@ area : num 0.00426 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -90.459 -90.533 -90.408 -90.459 0.266 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -79.86 -2.58 .. ..
.. .. .. ..@ area : num 0.0041 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] -79.84 -79.89 -79.86 -79.84 -2.64 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -89.67 -1.37 .. ..
.. .. .. ..@ area : num 0.00348 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] -89.62 -89.75 -89.65 -89.62 -1.41 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -90.781 0.588 .. ..
.. .. .. ..@ area : num 0.00221 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:4, 1:2] -90.751 -90.8 -90.792 -90.751 0.548 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -90.055 -0.816 ..
.. .. .. ..@ area : num 0.000641 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] -90.043 -90.082 -90.04 -90.043 -0.839 ... .. .. ..@
plotOrder: int [1:14] 1 2 3 4 5 6 7 8 9 10 ... .. .. ..@ labpt : num [1:2] -78.4 -1.45 .. .. ..@ ID :
chr "ECU" .. .. .. ..@ area : num 20.8 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
.. .. ..@ Polygons :List of 6 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 29.9 26.5 .. .. .. ..@ area : num 90.8 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:38, 1:2] 25.3 27.3 29.1 31
31.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 34 27.5 .. .. .. ..@ area : num 0.00284 .. .. .. ..@ hole : logi FALSE .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 34 34 33.9 34 27.5 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 33.1 31.2 .. ..
.. .. ..@ area : num 0.00177 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:6, 1:2] 33.2 33.3 33.1 33 33.1 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 33.4 31.2 .. .. .. ..@ area :

```

```
num 0.00168 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@
coords : num [1:4, 1:2] 33.5 33.3 33.4 33.5 31.1 ... .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. ..@ labpt : num [1:2] 34 26.7 .. .. ..@ area : num 0.000609 ..
.. .. ..@ hole : logi TRUE .. .. ..@ ringDir: int -1 .. .. ..@ coords : num [1:4,
1:2] 34 34 34 34 26.7 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 32 31.2 .. .. ..@ area : num 4.27e-05 .. .. ..@ hole : logi
FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 32 32 32 32 31.1 ...
.. .. ..@ plotOrder: int [1:6] 1 2 3 4 5 6 .. .. ..@ labpt : num [1:2] 29.9 26.5 .. .. ..@ ID : chr
"EGY" .. .. ..@ area : num 90.8 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..
..@ Polygons :List of 5 .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] -8.08 53.21 .. .. ..@ area : num 9.2 .. .. ..@ hole : logi
FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:37, 1:2] -7.41 -8.16 -7.56
-7.03 -6.27 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt
: num [1:2] -10.1 54 .. .. ..@ area : num 0.0218 .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] -9.96 -9.96 -10.27 -9.96 54.02 ... ..
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] -9.68
53.26 .. .. ..@ area : num 0.00187 .. .. ..@ hole : logi FALSE .. .. ..@
ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] -9.66 -9.72 -9.66 -9.66 53.22 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] -8.52 54.99
.. .. ..@ area : num 0.0011 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir:
int 1 .. .. ..@ coords : num [1:4, 1:2] -8.52 -8.55 -8.49 -8.52 54.96 ... .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] -8.44 54.95 .. .. ..
.. ..@ area : num 8.3e-05 .. .. ..@ hole : logi TRUE .. .. ..@ ringDir: int -1 ..
.. ..@ coords : num [1:4, 1:2] -8.44 -8.44 -8.45 -8.44 54.94 ... .. ..@ plotOrder: int [1:5]
1 2 3 4 5 .. .. ..@ labpt : num [1:2] -8.08 53.21 .. .. ..@ ID : chr "IRL" .. .. ..@ area : num
9.22 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 3 .. ..
.. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 10.44
1.58 .. .. ..@ area : num 2.11 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir:
int 1 .. .. ..@ coords : num [1:7, 1:2] 10.03 11.34 11.35 9.8 9.36 ... .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 8.71 3.55 .. .. ..
.. ..@ area : num 0.0987 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:5, 1:2] 8.86 8.45 8.69 8.96 8.86 ... .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 5.63 -1.45 .. .. ..@ area :
num 0.000686 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@
coords : num [1:4, 1:2] 5.64 5.62 5.63 5.64 -1.47 ... .. ..@ plotOrder: int [1:3] 1 2 3 .. .. ..@
labpt : num [1:2] 10.44 1.58 .. .. ..@ ID : chr "GNQ" .. .. ..@ area : num 2.21 .. .. .$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 6 .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num [1:2] 25.9 58.7 .. .. ..@
area : num 6.67 .. .. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@
coords : num [1:16, 1:2] 25.8 28 28.2 27.4 27.8 ... .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. ..@ labpt : num [1:2] 22.5 58.4 .. .. ..@ area : num 0.46 .. ..
.. ..@ hole : logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:6,
1:2] 23 23.3 22 22.2 21.8 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 22.6 58.9 .. .. ..@ area : num 0.0667 .. .. ..@ hole :
logi FALSE .. .. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 22.7 23 22 22.7
59 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..@ labpt : num
[1:2] 23.2 58.6 .. .. ..@ area : num 0.0171 .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. ..@ coords : num [1:4, 1:2] 23.4 23.1 23.2 23.4 58.5 ... .. ..
```

```

..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 23.3 59
.. .. .. ..@ area : num 0.00644 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.3 23.1 23.4 23.3 59 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24 58.1 .. .. .. ..@
area : num 0.00166 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 24 23.9 24 24 58.1 ... .. .. ..@ plotOrder: int [1:6] 1 2 3 4 5 6 .. ..
..@ labpt : num [1:2] 25.9 58.7 .. .. ..@ ID : chr "EST" .. .. ..@ area : num 7.23 .. ..$ :Formal class
'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons :List of 3 .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 38.9 15.3 .. .. .. ..@
area : num 10.4 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:20, 1:2] 38.8 39.7 39.9 40.2 41.2 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 40.2 15.7 .. .. .. ..@ area : num 0.0562
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 40.1 40.4 40 40.1 15.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] 40 16.1 .. .. .. ..@ area : num 0.00445 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 40.1 40
40 40.1 16.1 ... .. .. ..@ plotOrder: int [1:3] 1 2 3 .. .. ..@ labpt : num [1:2] 38.9 15.3 .. ..
..@ ID : chr "ERI" .. .. ..@ area : num 10.4 .. ..$ :Formal class 'Polygons' [package "sp"] with 5
slots .. .. ..@ Polygons :List of 2 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] -88.9 13.7 .. .. .. ..@ area : num 1.52 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:9, 1:2] -89.3
-88.5 -87.8 -87.8 -87.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] -87.7 13.2 .. .. .. ..@ area : num 0.000823 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -87.7 -87.7
-87.7 -87.7 13.2 ... .. .. ..@ plotOrder: int [1:2] 1 2 .. .. ..@ labpt : num [1:2] -88.9 13.7 .. ..
..@ ID : chr "SLV" .. .. ..@ area : num 1.52 .. ..$ :Formal class 'Polygons' [package "sp"] with 5
slots .. .. ..@ Polygons :List of 1 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] 39.63 8.61 .. .. .. ..@ area : num 92.8 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:39, 1:2] 36.5 37.3
37.6 37.9 38.4 ... .. .. ..@ plotOrder: int 1 .. .. ..@ labpt : num [1:2] 39.63 8.61 .. .. ..@ ID
: chr "ETH" .. .. ..@ area : num 92.8 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots
.. .. ..@ Polygons :List of 1 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. .. ..@ labpt : num [1:2] 14.2 47.6 .. .. .. ..@ area : num 10.2 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:25, 1:2] 13.8 14.7 15
16.9 17.2 ... .. .. ..@ plotOrder: int 1 .. .. ..@ labpt : num [1:2] 14.2 47.6 .. .. ..@ ID : chr
"AUT" .. .. ..@ area : num 10.2 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..
..@ Polygons :List of 1 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
..@ labpt : num [1:2] 15.3 49.8 .. .. .. ..@ area : num 10.2 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:18, 1:2] 14.7 13.8 12.7 12.1 14.3 ...
.. .. ..@ plotOrder: int 1 .. .. ..@ labpt : num [1:2] 15.3 49.8 .. .. ..@ ID : chr "CZE" .. ..
..@ area : num 10.2 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons
:List of 1 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] -53.25 3.89 .. .. .. ..@ area : num 6.55 .. .. .. ..@ hole : logi FALSE .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:12, 1:2] -53.5 -52.3 -52 -51.9 -51.7 ...
.. .. ..@ plotOrder: int 1 .. .. ..@ labpt : num [1:2] -53.25 3.89 .. .. ..@ ID : chr "GUF" .. ..
..@ area : num 6.55 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. ..@ Polygons
:List of 26 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 26.2 64.5 .. .. .. ..@ area : num 61.3 .. .. .. ..@ hole : logi FALSE .. .. ..

```

```

... ..@ ringDir: int 1 ... ..@ coords : num [1:60, 1:2] 28.2 29.2 28.8 29 28.4 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 22.6 60.1
... ..@ area : num 0.0374 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:5, 1:2] 22.8 22.5 22.4 22.6 22.8 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 24.8 65 ... ..@
area : num 0.0205 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] 24.7 24.6 25 24.7 64.9 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] 21.3 63.2 ... ..@ area : num 0.0167 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] 21.1 21.4 21.2 21.1 63.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 21.9 60.4 ... ..@ area : num 0.00939 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 22 21.8 21.8 22
60.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] 22.8 63.8 ... ..@ area : num 0.00797 ... ..@ hole : logi FALSE ... ..
..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 22.9 22.7 22.8 22.9 63.8 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 23.5 59.9 ..
... ..@ area : num 0.00688 ... ..@ hole : logi TRUE ... ..@ ringDir: int
-1 ... ..@ coords : num [1:4, 1:2] 23.7 23.5 23.4 23.7 59.9 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 22.9 59.9 ... ..@
area : num 0.00671 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] 22.8 23.1 22.9 22.8 60 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] 21.8 60.2 ... ..@ area : num 0.00598 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] 21.7 21.7 21.9 21.7 60.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 22.2 60.3 ... ..@ area : num 0.00516 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 22.3 22.1
22.1 22.3 60.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] 21.4 60.5 ... ..@ area : num 0.00466 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 21.5 21.4 21.3 21.5 60.5 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
22.1 63.3 ... ..@ area : num 0.00421 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 22.2 22 22.2 22.2 63.3 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 21.6 60.1 ... ..
..@ area : num 0.0037 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] 21.6 21.5 21.7 21.6 60.1 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 22 60.2 ... ..@ area : num
0.00357 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] 22 21.9 22.1 22 60.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5
slots ... ..@ labpt : num [1:2] 21.3 63.3 ... ..@ area : num 0.00343 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
21.3 21.2 21.4 21.3 63.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 22.4 60 ... ..@ area : num 0.00339 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 22.4 22.4 22.4 22.4
60 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] 22.4 60.3 ... ..@ area : num 0.0032 ... ..@ hole : logi FALSE ... ..
..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 22.4 22.3 22.5 22.4 60.3 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 21.3 60.9 ..
... ..@ area : num 0.00285 ... ..@ hole : logi FALSE ... ..@ ringDir:

```

```

int 1 .. .. .. ..@ coords : num [1:4, 1:2] 21.3 21.3 21.4 21.3 60.9 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.6 60.2 .. .. .. ..
..@ area : num 0.0028 .. .. .. ..@ hole : logi TRUE .. .. .. ..@ ringDir: int -1 .. ..
.. .. ..@ coords : num [1:4, 1:2] 25.7 25.6 25.6 25.7 60.2 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 21.3 60.5 .. .. .. ..@ area : num
0.00205 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 21.3 21.3 21.2 21.3 60.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 21.3 60.6 .. .. .. ..@ area : num 0.00194 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 21.3
21.3 21.2 21.3 60.6 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 22.3 60.2 .. .. .. ..@ area : num 0.0018 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 22.2 22.2 22.3 22.2
60.2 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 21.7 60.5 .. .. .. ..@ area : num 0.00162 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:5, 1:2] 21.8 21.7 21.7 21.8 21.8 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 21.4 60.2 ..
.. .. .. ..@ area : num 0.00146 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 21.4 21.4 21.3 21.4 60.2 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.8 60.2 .. .. .. ..
..@ area : num 0.00041 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. .. ..@ coords : num [1:4, 1:2] 25.8 25.8 25.9 25.8 60.2 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.5 65.8 .. .. .. ..@ area : num
0.00033 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 24.5 24.4 24.5 24.5 65.8 ... .. .. ..@ plotOrder: int [1:26] 1 2 3 4 5 6 7 8 9 10 ... ..
.. ..@ labpt : num [1:2] 26.2 64.5 .. .. .. ..@ ID : chr "FIN" .. .. .. ..@ area : num 61.5 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 37 .. .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 178 -17.8 .. .. .. ..
..@ area : num 0.674 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:5, 1:2] 178 179 177 178 178 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 179.3 -16.6 .. .. .. ..@ area : num 0.393
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:11, 1:2] 180 179 180 180 180 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] 178 -19 .. .. .. ..@ area : num 0.0284 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 178 178 178
178 -19 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] -179.9 -16.8 .. .. .. ..@ area : num 0.0122 .. .. .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -180 -180 -180 -180 -17 ... .. ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 179.9
-16.9 .. .. .. ..@ area : num 0.00802 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 180 180 180 180 -17 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 179 -18 .. .. .. ..
..@ area : num 0.0062 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] 179.4 179.2 179.3 179.4 -18.1 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -179 -17.2 .. .. .. ..@ area : num
0.00604 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] -178.9 -179 -179 -178.9 -17.3 ... .. .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] 179.9 -18.6 .. .. .. ..@ area : num 0.00549 ..
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num

```

```

[1:4, 1:2] 179.9 179.8 180 179.9 -18.6 ... ..$.:Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] 179.4 -17.3 .. ..@ area : num 0.00548 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
179.4 179.4 179.4 179.4 -17.4 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
.. ..@ labpt : num [1:2] 178.8 -17.7 .. ..@ area : num 0.00408 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 178.8
178.7 178.8 178.8 -17.7 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 177.5 -16.7 .. ..@ area : num 0.00325 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 177.4 177.6
177.6 177.4 -16.8 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] -178.3 -17.9 .. ..@ area : num 0.003 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -178 -178 -178 -178
-18 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] -180 -16.5 .. ..@ area : num 0.00297 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -180 -180 -179.9 -180 -16.5 ...
.. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-180 -19 .. ..@ area : num 0.00283 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -179.8 -179.9 -179.8 -179.8 -18.9 ... ..
.. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 177.2
-17.1 .. ..@ area : num 0.00275 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 177.3 177.2 177.3 177.3 -17.1 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -178.8 -18.2
.. ..@ area : num 0.00214 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:4, 1:2] -178.8 -178.8 -178.7 -178.8 -18.2 ... ..$.:Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -179 -18 .. ..
.. ..@ area : num 0.00191 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -179 -179 -179 -179 -18 ... ..$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] 179.9 -16.6 .. ..@ area :
num 0.00141 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:6, 1:2] 180 180 180 180 180 ... ..$.:Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] 179.8 -19.2 .. ..@ area : num 0.0014 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
179.8 179.7 179.8 179.8 -19.2 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
.. ..@ labpt : num [1:2] -178.6 -19.2 .. ..@ area : num 0.00138 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -178.5
-178.6 -178.6 -178.5 -19.2 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 177.1 -12.5 .. ..@ area : num 0.00137 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 177.1 177 177.1
177.1 -12.5 ... ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 177.6 -18.5 .. ..@ area : num 0.00133 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 177.7 177.6 177.6 177.7 -18.6 ...
.. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
178.5 -18.9 .. ..@ area : num 0.00123 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 178.5 178.5 178.5 178.5 -18.9 ... ..
.. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 178.3
-16.8 .. ..@ area : num 0.00112 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 178.3 178.3 178.3 178.3 -16.8 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 177.1 -17.3

```

```

... ..@ area : num 0.00105 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 177.1 177.1 177.1 177.1 -17.3 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -179.3 -17.8 ... ..
... ..@ area : num 0.00093 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1
... ..@ coords : num [1:4, 1:2] -179.3 -179.3 -179.3 -17.8 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -179 -19 ... ..
... ..@ area : num 9e-04 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -179 -179 -179 -19 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -179.2 -17.4 ... ..@ area :
num 0.000816 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@
coords : num [1:4, 1:2] -179.1 -179.2 -179.1 -17.5 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 178.1 -18.4 ... ..@ area :
num 0.000799 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] 178.1 178.1 178.1 178.1 -18.4 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -180 -16.2 ... ..@ area : num
0.00079 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -180 -180 -179.9 -180 -16.2 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -178.4 -19.2 ... ..@ area : num 0.000784 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] -178.4 -178.4 -178.4 -19.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5
slots ... ..@ labpt : num [1:2] 179.4 -17.8 ... ..@ area : num 0.000719 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
179.4 179.4 179.4 179.4 -17.8 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -178.5 -18.7 ... ..@ area : num 0.000602 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -178.5
-178.5 -178.5 -18.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -179.1 -17.3 ... ..@ area : num 0.000545 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -179.1
-179.2 -179.1 -17.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] 180 -16.5 ... ..@ area : num 0.000413 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 180 180 180
180 -16.5 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] -178.7 -20.7 ... ..@ area : num 0.000322 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -178.7 -178.7 -178.7 -178.7
-20.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] -178.2 -19.8 ... ..@ area : num 0.00016 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -178.2 -178.2 -178.2 -178.2 -19.9 ...
... ..@ plotOrder: int [1:37] 1 2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] 178 -17.8 ... ..
..@ ID : chr "FJI" ... ..@ area : num 1.18 ... ..$ :Formal class 'Polygons' [package "sp"] with 5
slots ... ..@ Polygons :List of 10 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -58.8 -51.8 ... ..@ area : num 0.613 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:15, 1:2] -58.7
-58.2 -58.3 -57.9 -57.8 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -60.1 -51.7 ... ..@ area : num 0.528 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:10, 1:2] -59.2 -60.4 -61
-60.2 -60.6 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -60.2 -51.3 ... ..@ area : num 0.0121 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -60.1 -60.3 -60.1 -60.1 -51.4 ...

```



```

... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-59.6 -51.3 .. .. .. ..@ area : num 0.012 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -59.5 -59.8 -59.5 -51.3 ... .. .. ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -59.7 -52.2 ..
.. .. .. ..@ area : num 0.00592 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:5, 1:2] -59.7 -59.8 -59.8 -59.7 -59.7 ... .. .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -58.5 -52 .. .. .. ..@
area : num 0.00521 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] -58.4 -58.5 -58.4 -52.1 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -61 -51.8 .. .. .. ..@ area : num
0.00518 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:5, 1:2] -61 -60.9 -61.1 -60.9 -61 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -61.3 -51.8 .. .. .. ..@ area : num 0.00321 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-61.2 -61.3 -61.2 -61.2 -51.9 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -60 -51.3 .. .. .. ..@ area : num 0.00292 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -59.9 -60 -59.9
-59.9 -51.4 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -61.3 -51.7 .. .. .. ..@ area : num 0.00225 .. .. .. ..@ hole : logi FALSE ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -61.2 -61.3 -61.3 -61.2 -51.7 ...
.. .. ..@ plotOrder: int [1:10] 1 2 3 4 5 6 7 8 9 10 .. .. ..@ labpt : num [1:2] -58.8 -51.8 .. ..
..@ ID : chr "FLK" .. .. ..@ area : num 1.19 .. ..$. :Formal class 'Polygons' [package "sp"] with
5 slots .. .. ..@ Polygons :List of 19 .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] 158.25 6.88 .. .. .. ..@ area : num 0.0143 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
158.3 158.12 158.32 158.3 6.79 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] 138.1 9.5 .. .. .. ..@ area : num 0.00768 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 138.21
138.06 138.13 138.21 9.52 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 162.98 5.32 .. .. .. ..@ area : num 0.00615 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 163.01
162.9 163.02 163.01 5.26 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 151.6 7.35 .. .. .. ..@ area : num 0.00225 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 151.64 151.57
151.61 151.64 7.33 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 151.88 7.44 .. .. .. ..@ area : num 0.00101 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 151.91 151.85
151.87 151.91 7.44 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 151.86 7.35 .. .. .. ..@ area : num 0.000569 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 151.86 151.84
151.87 151.86 7.32 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 149.67 8.59 .. .. .. ..@ area : num 0.000429 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 149.67 149.66
149.69 149.67 8.58 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 153.7 5.3 .. .. .. ..@ area : num 0.000324 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 153.67 153.66
153.71 153.67 5.29 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 158.25 6.99 .. .. .. ..@ area : num 0.000133 .. .. .. ..@ hole :

```

```

logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 158.25 158.24
158.26 158.25 6.98 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 157.94 6.72 .. .. .. ..@ area : num 9.85e-05 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 157.94 157.93
157.95 157.94 6.72 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 149.32 6.71 .. .. .. ..@ area : num 9.2e-05 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 149.3 149.3 149.3
149.3 6.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 157.98 6.74 .. .. .. ..@ area : num 9.08e-05 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 157.97 157.96 157.99 157.97
6.74 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 150.13 8.98 .. .. .. ..@ area : num 8.69e-05 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 150.13 150.12 150.13 150.13 8.98
... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 146.19 7.51 .. .. .. ..@ area : num 5.72e-05 .. .. .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 146.2 146.2 146.2 146.2 7.5 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
143.06 6.71 .. .. .. ..@ area : num 5.45e-05 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 143.06 143.05 143.06 143.06 6.71 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
149.19 7.38 .. .. .. ..@ area : num 4.88e-05 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 149.19 149.18 149.19 149.19 7.38 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
150.37 8.62 .. .. .. ..@ area : num 4.79e-05 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 150.38 150.37 150.37 150.38 8.62 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
149.2 7.37 .. .. .. ..@ area : num 4.39e-05 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 149.2 149.19 149.2 149.2 7.36 ...
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
143.92 7.38 .. .. .. ..@ area : num 4.01e-05 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 143.92 143.91 143.91 143.92 7.38 ...
.. .. ..@ plotOrder: int [1:19] 1 2 3 4 5 6 7 8 9 10 ... .. .. ..@ labpt : num [1:2] 158.25 6.88 ..
.. ..@ ID : chr "FSM" .. .. .. ..@ area : num 0.0335 .. ..$ :Formal class 'Polygons' [package "sp"]
with 5 slots .. .. ..@ Polygons :List of 32 .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] -149.3 -17.7 .. .. .. ..@ area : num 0.0259 .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -149.2 -149.2 -149.6 -149.2 -17.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] -140.16 -8.89 .. .. .. ..@ area : num 0.0139 .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-140 -140.2 -140.2 -140 -8.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -149.9 -17.5 .. .. .. ..@ area : num 0.00742 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -149.8
-149.9 -149.8 -149.8 -17.6 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -151.5 -16.8 .. .. .. ..@ area : num 0.00591 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -151.4
-151.5 -151.5 -151.4 -16.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] -140.1 -9.39 .. .. .. ..@ area : num 0.00413 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -140.08

```

-140.15 -140.09 -140.08 -9.45\$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
..@ labpt : num [1:2] -138.7 -10.5@ area : num 0.00391@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -138.7
-138.7 -138.6 -138.7 -10.5\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -139.57 -8.92@ area : num 0.00388@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -139.58
-139.5 -139.61 -139.58 -8.87\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -151.5 -16.6@ area : num 0.00346@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -151.5
-151.5 -151.4 -151.5 -16.7\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -138.98 -9.76@ area : num 0.00292@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -138.96
-138.81 -139.17 -138.96 -9.74\$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
..@ labpt : num [1:2] -140.68 -7.99@ area : num 0.00284@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -140.7
-140.71 -140.64 -140.7 -8.04\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -139.09 -9.93@ area : num 0.00273@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -139.11
-139.13 -139.05 -139.11 -9.98\$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
..@ labpt : num [1:2] -138.8 -22.2@ area : num 0.00201@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -138.7
-138.8 -138.7 -138.7 -22.3\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -140.6 -21.7@ area : num 0.00156@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -140.6
-140.7 -140.7 -140.6 -21.7\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -144.3 -27.6@ area : num 0.00154@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -144.3
-144.3 -144.3 -144.3 -27.6\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -151 -16.8@ area : num 0.00136@ hole :
logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -151 -151 -151
-151 -16.8\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] -151.4 -22.5@ area : num 0.00131@ hole : logi FALSE ..
..@ ringDir: int 1@ coords : num [1:4, 1:2] -151.4 -151.4 -151.4 -151.4
-22.5\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] -146.4 -16.1@ area : num 0.00128@ hole : logi FALSE ..
..@ ringDir: int 1@ coords : num [1:4, 1:2] -146.3 -146.4 -146.3 -146.3
-16.2\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] -149.5 -23.4@ area : num 0.00121@ hole : logi FALSE ..
..@ ringDir: int 1@ coords : num [1:4, 1:2] -149.5 -149.5 -149.5 -149.5
-23.4\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] -135 -23.1@ area : num 0.0012@ hole : logi FALSE
..@ ringDir: int 1@ coords : num [1:4, 1:2] -135 -135 -134.9 -135 -23.1 ...
..\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
-151 -16.7@ area : num 0.00118@ hole : logi FALSE
..@ ringDir: int 1@ coords : num [1:4, 1:2] -151 -151 -151 -151 -16.8
.. ..\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -151.8
-16.5@ area : num 0.000789@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] -151.7 -151.8 -151.7 -151.7 -16.5

```

.. ..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -147.7
-23.9 .. .. .. .. ..@ area : num 0.00077 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -147.7 -147.7 -147.6 -147.7 -23.9 ... .. ..
.. ..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -152.8
-22.6 .. .. .. .. ..@ area : num 0.000703 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -152.9 -152.8 -152.8 -152.9 -22.7 ... .. ..
.. ..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -148.3
-15.8 .. .. .. .. ..@ area : num 0.000678 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -148.2 -148.3 -148.3 -148.2 -15.8 ... .. ..
..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -140.58
-7.91 .. .. .. .. ..@ area : num 0.000489 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@
ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -140.58 -140.61 -140.56 -140.58 -7.92 ... ..
.. .. ..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2]
-144.6 -15.7 .. .. .. .. ..@ area : num 0.000439 .. .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -144.6 -144.6 -144.6 -144.6 -15.7 ...
.. .. .. ..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2]
-150.7 -17.7 .. .. .. .. ..@ area : num 0.000238 .. .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -150.6 -150.7 -150.6 -150.6 -17.7 ...
.. .. .. ..$:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2]
-150 -17 .. .. .. .. ..@ area : num 0.000205 .. .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] -150 -150 -150 -150 -17 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -135 -23.2 ..
.. .. .. ..@ area : num 0.000193 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int
1 .. .. .. .. ..@ coords : num [1:4, 1:2] -135.1 -135.1 -135 -135.1 -23.2 ... .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -143.5 -27.9 .. .. ..
.. .. ..@ area : num 0.00017 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. ..
.. .. ..@ coords : num [1:4, 1:2] -143.5 -143.5 -143.5 -143.5 -27.9 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -145 -19.9 .. .. .. .. ..@
area : num 0.000131 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] -145 -145 -145 -145 -19.9 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -150 -17 .. .. .. .. ..@ area : num
5.73e-05 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords
: num [1:4, 1:2] -150 -150 -150 -150 -17 ... .. .. ..@ plotOrder: int [1:32] 1 2 3 4 5 6 7 8 9 10 ...
.. .. .. ..@ labpt : num [1:2] -149.3 -17.7 .. .. .. ..@ ID : chr "PYF" .. .. .. ..@ area : num 0.0946 ..
..$:Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 10 .. .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 2.46 46.65
.. .. .. .. ..@ area : num 63.7 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int
1 .. .. .. .. ..@ coords : num [1:69, 1:2] 2.54 4.17 4.15 4.83 4.87 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 9.1 42.1 .. .. .. .. ..@
area : num 0.865 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@
coords : num [1:8, 1:2] 9.45 9.55 9.18 8.79 8.58 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] -1.28 45.95 .. .. .. .. ..@ area : num 0.0103
.. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num
[1:4, 1:2] -1.19 -1.4 -1.23 -1.19 45.82 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. .. ..@ labpt : num [1:2] -3.18 47.33 .. .. .. .. ..@ area : num 0.00558 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2]
-3.07 -3.22 -3.26 -3.07 47.31 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] -1.43 46.22 .. .. .. .. ..@ area : num 0.00507 .. .. .. .. ..@ hole

```

```
: logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -1.26 -1.55
-1.47 -1.26 46.16 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
..@ labpt : num [1:2] -2.21 46.98 .. ..@ area : num 0.0048 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -2.2 -2.14 -2.28 -2.2
47.02 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] -2.34 46.71 .. ..@ area : num 0.00123 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -2.27 -2.36 -2.38 -2.27 46.69 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-5.08 48.47 .. ..@ area : num 0.00113 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] -5.05 -5.13 -5.06 -5.05 48.45 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -3.57 48.81
.. ..@ area : num 5.47e-05 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] -3.58 -3.58 -3.56 -3.58 48.8 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 9.48 42.62 .. ..
.. ..@ area : num 3.9e-05 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 9.49 9.49 9.46 9.49 42.62 ... ..@ plotOrder: int [1:10] 1 2
3 4 5 6 7 8 9 10 .. ..@ labpt : num [1:2] 2.46 46.65 .. ..@ ID : chr "FRA" .. ..@ area :
num 64.6 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 1
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
-15.5 13.5 .. ..@ area : num 0.995 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:16, 1:2] -16.7 -16.2 -16.2 -15.3 -16.1 ... ..@
plotOrder: int 1 .. ..@ labpt : num [1:2] -15.5 13.5 .. ..@ ID : chr "GMB" .. ..@ area :
num 0.995 .. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 3
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
11.811 -0.615 .. ..@ area : num 21.2 .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. ..@ coords : num [1:35, 1:2] 12.5 13.3 13.2 14.2 14.5 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 8.987 -0.675
.. ..@ area : num 0.0051 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:4, 1:2] 9.008 8.947 9.007 9.008 -0.768 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 9.546 0.277 .. ..
.. ..@ area : num 0.000105 .. ..@ hole : logi TRUE .. ..@ ringDir: int -1 .. ..
.. ..@ coords : num [1:4, 1:2] 9.554 9.544 9.538 9.554 0.274 ... ..@ plotOrder: int [1:3] 1
2 3 .. ..@ labpt : num [1:2] 11.811 -0.615 .. ..@ ID : chr "GAB" .. ..@ area : num 21.2
.. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 43.5 42.2 ..
.. ..@ area : num 7.65 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:18, 1:2] 41.5 41.4 40 40.3 42.8 ... ..@ plotOrder: int 1 .. ..
..@ labpt : num [1:2] 43.5 42.2 .. ..@ ID : chr "GEO" .. ..@ area : num 7.65 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 1 .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -1.18 7.93 .. ..
..@ area : num 19.3 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:29, 1:2] 0.64 0.662 0.256 -0.796 -1.613 ... ..@ plotOrder: int 1 .. ..
..@ labpt : num [1:2] -1.18 7.93 .. ..@ ID : chr "GHA" .. ..@ area : num 19.3 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 3 .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -61.7 12.1 .. ..
..@ area : num 0.0104 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -61.7 -61.6 -61.6 -61.7 12 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -61.5 12.5 .. ..@ area : num
```

```

0.00262 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -61.4 -61.5 -61.4 -61.4 12.5 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -61.6 12.3 ... ..@ area : num 0.000127 ...
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] -61.6 -61.6 -61.6 -61.6 12.3 ... ..@ plotOrder: int [1:3] 1 2 3 ... ..@ labpt : num [1:2]
-61.7 12.1 ... ..@ ID : chr "GRD" ... ..@ area : num 0.0132 ... ..$ :Formal class 'Polygons'
[package "sp"] with 5 slots ... ..@ Polygons :List of 194 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -41.5 74.7 ... ..@ area :
num 638 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:576, 1:2] -32.3 -25.7 -35.6 -25.1 -24.8 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] -53.5 69.8 ... ..@ area : num 1.54 ...
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:12,
1:2] -52.7 -51.8 -53.6 -54.3 -53.3 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -26.6 70.7 ... ..@ area : num 0.84 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] -25.4 -25.3
-26 -28.1 -27.1 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] -45.9 82.4 ... ..@ area : num 0.836 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:7, 1:2] -46 -44.4 -45.1 -44.7 -45.1 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-23.2 72.5 ... ..@ area : num 0.622 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:7, 1:2] -23.6 -21.9 -22.8 -22.1 -22.6 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -24.5 73.3 ..
... ..@ area : num 0.384 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:8, 1:2] -24.4 -23.2 -25 -22.9 -25.7 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -23 72.9 ... ..@
area : num 0.316 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@
coords : num [1:4, 1:2] -22.5 -21.9 -24.6 -22.5 73 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] -18.4 75.2 ... ..@ area : num 0.283 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:6,
1:2] -17.8 -18.2 -17.3 -18.9 -18.8 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -21 74.3 ... ..@ area : num 0.194 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -20.9 -20.1 -22
-20.9 74.4 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -18.8 76.4 ... ..@ area : num 0.186 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] -18.7 -18.6 -19.1 -18.8 -19 ... ..
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -20.3
74.9 ... ..@ area : num 0.173 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:7, 1:2] -20.2 -19.7 -20.1 -20.7 -20.5 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -51 69.7 ... ..
... ..@ area : num 0.123 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:5, 1:2] -50.9 -50.7 -51 -51.4 -50.9 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -53.7 71.2 ... ..@ area : num
0.0892 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:5, 1:2] -53.6 -54 -53.6 -53.4 -53.6 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -19.6 80.2 ... ..@ area : num 0.0856 ...
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5,
1:2] -19.9 -20 -19.8 -19 -19.9 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -19.9 77.9 ... ..@ area : num 0.0756 ... ..@ hole

```

: logi FALSE@ ringDir: int 1@ coords : num [1:5, 1:2] -19.9 -19.2
-19.8 -20.5 -19.9\$. :Formal class 'Polygon' [package "sp"] with 5 slots
..@ labpt : num [1:2] -39.7 83.2@ area : num 0.0661@ hole : logi
FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -39.6 -38.6 -40.7
-39.6 83.3\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] -39.8 83.1@ area : num 0.0643@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] -39.6 -40.5 -39.3 -39.6 83
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -20.3
82@ area : num 0.061@ hole : logi FALSE@ ringDir:
int 1@ coords : num [1:4, 1:2] -19.8 -20.8 -20.3 -19.8 81.9\$. :Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -52 82.1
.. ..@ area : num 0.0594@ hole : logi FALSE@ ringDir: int 1
.. .. .@ coords : num [1:4, 1:2] -51.5 -53.4 -51.2 -51.5 82\$. :Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] -51.1 64.4@ area : num
0.0565@ hole : logi FALSE@ ringDir: int 1@ coords
: num [1:5, 1:2] -51.2 -51.3 -51 -50.8 -51.2\$. :Formal class 'Polygon' [package "sp"]
with 5 slots@ labpt : num [1:2] -37.6 65.7@ area : num 0.0562
.. .. .@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4,
1:2] -37.4 -37.5 -38 -37.4 65.8\$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .@ labpt : num [1:2] -72 77.4@ area : num 0.0552@ hole
: logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -71.9 -72.6
-71.3 -71.9 77.3\$. :Formal class 'Polygon' [package "sp"] with 5 slots@
labpt : num [1:2] -40.5 64.7@ area : num 0.0548@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] -40.2 -40.9 -40.5 -40.2 64.4
... .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num
[1:2] -40.7 83.1@ area : num 0.0525@ hole : logi FALSE
..@ ringDir: int 1@ coords : num [1:4, 1:2] -39.9 -41.5 -40.8 -39.9 83\$.
:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -55.4 72.2 ..
.. .. .@ area : num 0.0412@ hole : logi FALSE@ ringDir: int
1@ coords : num [1:4, 1:2] -55.4 -55.7 -55 -55.4 72.2\$. :Formal class
'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -52.6 68.7@
area : num 0.0387@ hole : logi FALSE@ ringDir: int 1
.. ..@ coords : num [1:4, 1:2] -52.1 -53.1 -52.6 -52.1 68.7\$. :Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] -17.8 79.1@ area : num
0.0375@ hole : logi FALSE@ ringDir: int 1@ coords
: num [1:4, 1:2] -18 -17.8 -17.6 -18 79\$. :Formal class 'Polygon' [package "sp"] with
5 slots@ labpt : num [1:2] -41.5 63.3@ area : num 0.0371
.. ..@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2]
-41.1 -41.4 -41.9 -41.1 63.2\$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .@ labpt : num [1:2] -48.4 82.5@ area : num 0.0351@ hole :
logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -48.2 -48.9 -48
-48.2 82.4\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] -27.6 70.8@ area : num 0.034@ hole : logi FALSE
.. .. .@ ringDir: int 1@ coords : num [1:4, 1:2] -27.7 -27.7 -27.3 -27.7 70.7
.. .. .\$. :Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -51.9
68.2@ area : num 0.034@ hole : logi FALSE@ ringDir:
int 1@ coords : num [1:4, 1:2] -52.1 -52.3 -51.5 -52.1 68.1\$. :Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -43.9 59.9

```

...@ area : num 0.0337 ...@ hole : logi FALSE ...@ ringDir: int 1 ...
...@ coords : num [1:4, 1:2] -43.6 -44.1 -44 -43.6 59.8 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ...@ labpt : num [1:2] -39.2 83.3 ...@ area : num
0.0308 ...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords
: num [1:4, 1:2] -38.9 -39.6 -39.2 -38.9 83.3 ...$ :Formal class 'Polygon' [package "sp"]
with 5 slots ...@ labpt : num [1:2] -48 60.8 ...@ area : num 0.0304 ...
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2]
-47.8 -47.9 -48.2 -47.8 60.8 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
...@ labpt : num [1:2] -51.9 70.9 ...@ area : num 0.0291 ...@ hole
: logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -51.6 -52.2
-52 -51.6 70.9 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@
labpt : num [1:2] -44.4 60 ...@ area : num 0.0291 ...@ hole : logi FALSE ..
...@ ringDir: int 1 ...@ coords : num [1:5, 1:2] -44.4 -44.5 -44.4 -44.2 -44.4
...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num
[1:2] -56.4 73.8 ...@ area : num 0.0286 ...@ hole : logi FALSE ...
...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -56 -56.3 -56.8 -56 73.8 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] -19.4 78.9 ..
...@ area : num 0.0278 ...@ hole : logi FALSE ...@ ringDir:
int 1 ...@ coords : num [1:4, 1:2] -19.3 -19.8 -19.2 -19.3 78.8 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] -55.4 72.7 ...
...@ area : num 0.0255 ...@ hole : logi FALSE ...@ ringDir: int 1 ...
...@ coords : num [1:4, 1:2] -55.3 -55.8 -55 -55.3 72.7 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ...@ labpt : num [1:2] -25 72.8 ...@ area : num
0.0255 ...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords
: num [1:4, 1:2] -24.9 -25.2 -24.8 -24.9 72.8 ...$ :Formal class 'Polygon' [package "sp"]
with 5 slots ...@ labpt : num [1:2] -53 68.4 ...@ area : num 0.0249 ...
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:5, 1:2]
-53 -53.2 -53 -52.9 -53 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
...@ labpt : num [1:2] -18.9 74.6 ...@ area : num 0.0243 ...@ hole : logi
FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -18.8 -19.2 -18.8
-18.8 74.5 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt
: num [1:2] -55.7 73.5 ...@ area : num 0.0238 ...@ hole : logi FALSE ..
...@ ringDir: int 1 ...@ coords : num [1:4, 1:2] -55.6 -56.1 -55.5 -55.6 73.4 ...
...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2]
-20.9 76.5 ...@ area : num 0.0236 ...@ hole : logi FALSE ...@
ringDir: int 1 ...@ coords : num [1:4, 1:2] -20.8 -21.1 -20.7 -20.8 76.4 ...$
:Formal class 'Polygon' [package "sp"] with 5 slots ..@ labpt : num [1:2] -18.7 81.7 ..
...@ area : num 0.0236 ...@ hole : logi FALSE ...@ ringDir: int
1 ...@ coords : num [1:4, 1:2] -18.6 -19.2 -18.3 -18.6 81.6 ...$ :Formal class
'Polygon' [package "sp"] with 5 slots ...@ labpt : num [1:2] -36.6 65.9 ...@
area : num 0.0231 ...@ hole : logi FALSE ...@ ringDir: int 1 ...
...@ coords : num [1:5, 1:2] -36.6 -36.7 -36.7 -36.5 -36.6 ...$ :Formal class 'Polygon'
[package "sp"] with 5 slots ...@ labpt : num [1:2] -70.7 77.4 ...@ area : num
0.0216 ...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords
: num [1:4, 1:2] -70.7 -70.1 -71.3 -70.7 77.5 ...$ :Formal class 'Polygon' [package "sp"]
with 5 slots ...@ labpt : num [1:2] -52.7 71.3 ...@ area : num 0.0209 ...
...@ hole : logi FALSE ...@ ringDir: int 1 ...@ coords : num [1:4, 1:2]
-52.6 -52.3 -53.2 -52.6 71.3 ...$ :Formal class 'Polygon' [package "sp"] with 5 slots ..

```


... ..@ labpt : num [1:2] -18 77.7@ area : num 0.0207@ hole :
logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -18 -18.2 -17.6
-18 77.7\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt :
num [1:2] -20.4 76.3@ area : num 0.02@ hole : logi FALSE
... ..@ ringDir: int 1@ coords : num [1:4, 1:2] -20.3 -20.7 -20.2 -20.3 76.3
..\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -45.3 60.3
... ..@ area : num 0.0199@ hole : logi FALSE@ ringDir:
int 1@ coords : num [1:4, 1:2] -45.4 -45.4 -45.2 -45.4 60.2\$:Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -55.4 73
... ..@ area : num 0.0184@ hole : logi FALSE@ ringDir: int 1
... ..@ coords : num [1:4, 1:2] -55.1 -55.7 -55.5 -55.1 73\$:Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] -44.2 60@ area : num
0.0177@ hole : logi FALSE@ ringDir: int 1@ coords
: num [1:4, 1:2] -44.3 -44.2 -44 -44.3 59.9\$:Formal class 'Polygon' [package "sp"]
with 5 slots@ labpt : num [1:2] -21.2 76.6@ area : num 0.0167
... ..@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4,
1:2] -21.1 -21.5 -21 -21.1 76.6\$:Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -55.9 72.7@ area : num 0.0161@
hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -55.7
-56.2 -55.6 -55.7 72.7\$:Formal class 'Polygon' [package "sp"] with 5 slots
... ..@ labpt : num [1:2] -40.8 64.2@ area : num 0.0155@ hole : logi
FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -40.7 -40.7 -41.1
-40.7 64.3\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] -56.7 73.6@ area : num 0.0155@ hole : logi FALSE
... ..@ ringDir: int 1@ coords : num [1:4, 1:2] -56.3 -56.8 -57 -56.3 73.7
... ..\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -56.9
74.5@ area : num 0.015@ hole : logi FALSE@ ringDir:
int 1@ coords : num [1:4, 1:2] -56.5 -56.5 -57.6 -56.5 74.5\$:Formal
class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -53 65.6
... ..@ area : num 0.0149@ hole : logi FALSE@ ringDir: int 1
... ..@ coords : num [1:4, 1:2] -53 -53.2 -52.8 -53 65.5\$:Formal class 'Polygon'
[package "sp"] with 5 slots@ labpt : num [1:2] -23.4 69.7@ area : num
0.0148@ hole : logi FALSE@ ringDir: int 1@ coords
: num [1:4, 1:2] -23.3 -23.6 -23.3 -23.3 69.6\$:Formal class 'Polygon' [package "sp"]
with 5 slots@ labpt : num [1:2] -54.9 70.4@ area : num 0.0146
... ..@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4,
1:2] -54.7 -54.9 -55 -54.7 70.4\$:Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -56 73.2@ area : num 0.0145@ hole :
logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] -56.1 -56 -55.8
-56.1 73.1\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt
: num [1:2] -51.3 64.5@ area : num 0.014@ hole : logi FALSE
... ..@ ringDir: int 1@ coords : num [1:4, 1:2] -51.3 -51.4 -51.1 -51.3 64.4 ...
... ..\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2]
-55.6 71.9@ area : num 0.0132@ hole : logi FALSE@
ringDir: int 1@ coords : num [1:4, 1:2] -55.6 -55.8 -55.4 -55.6 71.8\$
:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] -47.8 82.8 ..
... ..@ area : num 0.0132@ hole : logi FALSE@ ringDir: int
1@ coords : num [1:4, 1:2] -47.6 -48.4 -47.4 -47.6 82.8\$:Formal class

```

'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -37.1 65.7 .. .. .. ..@
area : num 0.0128 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] -37 -37.2 -37 -37 65.6 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -19 82.1 .. .. .. ..@ area : num 0.0125 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -18.9 -19.4 -18.8 -18.9 82 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] -69.7 76.6 .. .. .. ..@ area : num 0.0123 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -69.7 -70
-69.5 -69.7 76.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] -19 78.1 .. .. .. ..@ area : num 0.0117 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -19 -19.2 -18.8 -19 78.1 ...
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
-18.5 78.6 .. .. .. ..@ area : num 0.0116 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -18.6 -18.7 -18.3 -18.6 78.6 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -21.3 77.9 ..
.. .. .. ..@ area : num 0.0112 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] -21.3 -21.4 -21.1 -21.3 77.9 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -19.1 78.3 .. .. .. ..@
area : num 0.0112 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] -19.2 -19.4 -18.9 -19.2 78.2 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -19.3 78.4 .. .. .. ..@ area : num
0.0111 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] -19.3 -19.4 -19.1 -19.3 78.3 ... .. .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. ..@ labpt : num [1:2] -46.6 60.8 .. .. .. ..@ area : num 0.0109 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
-46.8 -46.8 -46.2 -46.8 60.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .. ..@ labpt : num [1:2] -20.6 81.7 .. .. .. ..@ area : num 0.0108 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -20.6 -21 -20.2
-20.6 81.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] -42.1 62.8 .. .. .. ..@ area : num 0.0107 .. .. .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -42 -41.9 -42.4 -42 62.8 ... .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -29.8 68.2
.. .. .. ..@ area : num 0.0107 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] -29.8 -30 -29.7 -29.8 68.1 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -18.2 78.8 .. .. .. ..@
area : num 0.0106 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] -18.2 -18.3 -18.1 -18.2 78.8 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -55.2 72.6 .. .. .. ..@ area :
num 0.0105 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] -55.1 -55.4 -55 -55.1 72.5 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] -18.4 74.7 .. .. .. ..@ area : num 0.01 .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] -18.5 -18.3 -18.4 -18.5 74.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] -20.5 78.2 .. .. .. ..@ area : num 0.01 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -20.5 -20.8
-20.3 -20.5 78.2 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] -46.4 60.7 .. .. .. ..@ area : num 0.00908 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] -46.3 -46.5 -46.3 -46.3 60.7

```

```
... ..@ labpt : num [1:2]
-19.6 78.3 ... ..@ area : num 0.00902 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -19.6 -19.7 -19.5 -19.6 78.3 ... ..@$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -53 65.5 ...
... ..@ area : num 0.00894 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -52.9 -53.1 -52.9 -52.9 65.4 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -36.8 65.8 ... ..@
area : num 0.00892 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -36.8 -36.9 -36.8 -36.8 65.8 ... ..@$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] -39.6 65.3 ... ..@ area : num
0.00888 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] -39.5 -39.6 -39.8 -39.5 65.3 ... ..@$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -20.2 77.6 ... ..@ area : num 0.00882 ...
... ..@ hole : logi TRUE ... ..@ ringDir: int -1 ... ..@ coords : num [1:4,
1:2] -20.1 -20.4 -20 -20.1 77.7 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -51.4 64.3 ... ..@ area : num 0.0086 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -51.6
-51.4 -51.3 -51.6 64.3 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] -41.5 63 ... ..@ area : num 0.00858 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -41.6 -41.6 -41.5
-41.6 62.9 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] -19.4 79.2 ... ..@ area : num 0.00849 ... ..@ hole : logi FALSE ...
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -19.4 -19.5 -19.3 -19.4 79.1 ...
... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-38.3 83.2 ... ..@ area : num 0.00803 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -38.3 -38.7 -38 -38.3 83.1 ... ..@$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -56.4 73.6 ..
... ..@ area : num 0.00794 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -56.4 -56.6 -56.2 -56.4 73.5 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -45.9 60.7 ... ..@
area : num 0.00783 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:6, 1:2] -46 -46 -46 -46 -45.8 ... ..@$ :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] -56 73.3 ... ..@ area : num 0.0077 ...
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] -56 -56.2 -55.8 -56 73.3 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ...
... ..@ labpt : num [1:2] -46.1 60.7 ... ..@ area : num 0.00767 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] -45.9 -46 -46.1
-46.2 -46 ... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] -55.7 73.3 ... ..@ area : num 0.00754 ... ..@ hole : logi FALSE ...
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -55.7 -55.9 -55.7 -55.7 73.3 ...
... ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
-42.2 61.8 ... ..@ area : num 0.00716 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -42.3 -42.1 -42.1 -42.3 61.8 ... ..@$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -55.5 72.9 ..
... ..@ area : num 0.00698 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] -55.6 -55.4 -55.5 -55.6 72.9 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -51.7 70.7 ... ..@
area : num 0.00675 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
```

```

.. ..@ coords : num [1:4, 1:2] -51.5 -51.9 -51.7 -51.5 70.7 ... .. [list output truncated] ..
.. ..@ plotOrder: int [1:194] 1 2 3 4 5 6 7 8 9 10 ... .. ..@ labpt : num [1:2] -41.5 74.7 ... ..
.. ..@ ID : chr "GRL" .. .. ..@ area : num 645 .. ..$ :Formal class 'Polygons' [package "sp"] with 5
slots .. .. ..@ Polygons :List of 23 .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. ..@ labpt : num [1:2] 10.4 51.1 .. .. .. ..@ area : num 45 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:63, 1:2] 11 10.8 12.5
12.9 12.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 13.4 54.4 .. .. .. ..@ area : num 0.102 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:8, 1:2] 13.4 13.7 13.1 13.3 13.1 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 14 53.9 ..
.. .. .. ..@ area : num 0.0418 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. .. ..@ coords : num [1:7, 1:2] 14 14.2 14.2 13.8 14.1 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 11.2 54.5 .. .. .. ..@ area : num
0.0138 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] 11.3 11 11.2 11.3 54.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 8.51 54.72 .. .. .. ..@ area : num 0.00562 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
8.57 8.4 8.55 8.57 54.69 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 8.89 54.49 .. .. .. ..@ area : num 0.00355 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 8.89 8.82 8.96
8.89 54.46 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 8.34 54.66 .. .. .. ..@ area : num 0.00316 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 8.36 8.29 8.35 8.36 54.61 ... ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 11.4
54 .. .. .. ..@ area : num 0.00305 .. .. .. ..@ hole : logi TRUE .. .. .. ..@ ringDir:
int -1 .. .. .. ..@ coords : num [1:4, 1:2] 11.5 11.5 11.4 11.5 54 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 8.65 54.52 .. .. ..
.. ..@ area : num 0.00287 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 8.66 8.59 8.71 8.66 54.49 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 13.1 54.6 .. .. .. ..@ area : num
0.00265 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 13.1 13.1 13.2 13.1 54.5 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 6.74 53.58 .. .. .. ..@ area : num 0.00263 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
6.81 6.75 6.66 6.81 53.6 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 7.53 53.75 .. .. .. ..@ area : num 0.00169 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 7.62 7.47 7.49
7.62 53.75 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 7.24 53.71 .. .. .. ..@ area : num 0.000976 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 7.24 7.14 7.35 7.24 53.7 ...
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
7.75 53.77 .. .. .. ..@ area : num 0.000738 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 7.76 7.66 7.81 7.76 53.76 ... ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 8.43
53.95 .. .. .. ..@ area : num 0.000647 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 8.43 8.41 8.45 8.43 53.93 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 8.15 53.72 ..
.. .. .. ..@ area : num 0.000598 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:

```

```

int 1 .. .. ..@ coords : num [1:4, 1:2] 8.19 8.12 8.14 8.19 53.72 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 6.97 53.67 .. .. .. ..
..@ area : num 0.000526 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 6.94 6.88 7.09 6.94 53.67 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 8.69 54.07 .. .. .. ..@ area :
num 0.000459 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 8.7 8.67 8.69 8.7 54.04 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 8.69 47.7 .. .. .. ..@ area : num 0.000295
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 8.71 8.68 8.67 8.71 47.7 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5
slots .. .. .. ..@ labpt : num [1:2] 11.6 54.1 .. .. .. ..@ area : num 0.000278 .. .. .. ..
..@ hole : logi TRUE .. .. .. ..@ ringDir: int -1 .. .. .. ..@ coords : num [1:4, 1:2] 11.5
11.6 11.5 11.5 54.1 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 12.7 54.4 .. .. .. ..@ area : num 0.000232 .. .. .. ..@ hole : logi
TRUE .. .. .. ..@ ringDir: int -1 .. .. .. ..@ coords : num [1:4, 1:2] 12.7 12.7 12.7 12.7
54.4 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 11 54.4 .. .. .. ..@ area : num 6.6e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 11 11 11 11 54.4 ... .. .. .. .$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 13.9 54 .. .. .. ..
..@ area : num 3.95e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 13.9 13.9 13.9 13.9 54 ... .. .. ..@ plotOrder: int [1:23] 1 2 3
4 5 6 7 8 9 10 ... .. .. ..@ labpt : num [1:2] 10.4 51.1 .. .. .. ..@ ID : chr "DEU" .. .. .. ..@ area :
num 45.2 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 1
.. .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
144.7 13.4 .. .. .. ..@ area : num 0.0273 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 144.7 144.7 144.9 144.7 13.2 ... .. .. ..@
plotOrder: int 1 .. .. .. ..@ labpt : num [1:2] 144.7 13.4 .. .. .. ..@ ID : chr "GUM" .. .. .. ..@ area :
num 0.0273 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List
of 68 .. .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 22.6 39.5 .. .. .. ..@ area : num 11.2 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 26.3 26.4 26.6 26 25.1 ... .. .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.7 35.2 .. ..
.. ..@ area : num 0.777 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:6, 1:2] 23.9 26.3 24.8 23.5 23.6 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 23.8 38.5 .. .. .. ..@ area : num
0.473 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:5, 1:2] 23.5 24.2 24.6 22.8 23.5 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 26.3 39.2 .. .. .. ..@ area : num 0.0818 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 26.4
26.6 25.8 26.4 39.3 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
.. ..@ labpt : num [1:2] 27.9 36.2 .. .. .. ..@ area : num 0.0793 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 27.8 27.7 28.2 27.8
35.9 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 20.6 38.2 .. .. .. ..@ area : num 0.0648 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 20.6 20.8 20.3 20.6 38.4 ... .. .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 26 38.4 .. ..
.. ..@ area : num 0.0573 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. .. ..@ coords : num [1:4, 1:2] 26 25.9 26.2 26 38.2 ... .. .. .. .$ :Formal class 'Polygon'

```

```

[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.3 39.9 .. .. .. ..@ area : num
0.0361 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords
: num [1:4, 1:2] 25.4 25.4 25.1 25.4 40 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 19.8 39.7 .. .. .. ..@ area : num 0.0354 .. .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:5, 1:2]
19.9 19.8 20.1 19.6 19.9 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 20.8 37.8 .. .. .. ..@ area : num 0.0238 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 20.9 20.8 20.6
20.9 37.8 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 25.4 37.1 .. .. .. ..@ area : num 0.0232 .. .. .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.5 25.3 25.5 25.5 36.9 ... ..
.. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 27.2
35.6 .. .. .. ..@ area : num 0.023 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 27.2 27.1 27.2 27.2 35.4 ... .. .. ..$.:Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.8 37.9 .. .. .. ..@
area : num 0.0228 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 24.8 25 24.7 24.8 38 ... .. .. ..$.:Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 26.8 37.8 .. .. .. ..@ area : num 0.0218 ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] 27.1 26.6 26.7 27.1 37.7 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 27.1 36.8 .. .. .. ..@ area : num 0.021 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 27 27.1 27.4 27
36.7 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 24.6 40.7 .. .. .. ..@ area : num 0.0202 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 24.8 24.5 24.6 24.8 40.6 ... .. .. ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 26.1 37.6 ..
.. .. ..@ area : num 0.0159 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] 26 26.1 26.4 26 37.5 ... .. .. ..$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.6 38.8 .. .. .. ..@ area : num
0.014 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 24.7 24.6 24.5 24.7 38.8 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 20.6 38.7 .. .. .. ..@ area : num 0.0139 .. .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
20.6 20.6 20.7 20.6 38.6 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 23 36.3 .. .. .. ..@ area : num 0.0134 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23 22.9 23.1 23 36.1
... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
25.1 37.6 .. .. .. ..@ area : num 0.0118 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.2 25 25.2 25.2 37.5 ... .. .. ..$.:Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.2 37.1 .. .. ..
.. ..@ area : num 0.0101 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 25.3 25.1 25.3 25.3 37 ... .. .. ..$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.6 40.4 .. .. .. ..@ area : num
0.00899 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 25.6 25.4 25.7 25.6 40.4 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 24.4 36.7 .. .. .. ..@ area : num 0.00897 .. .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
24.4 24.3 24.5 24.4 36.7 ... .. .. ..$.:Formal class 'Polygon' [package "sp"] with 5 slots .. ..

```

```

.. .. ..@ labpt : num [1:2] 26.4 36.6 .. .. .. ..@ area : num 0.0087 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 26.3 26.3 26.5
26.3 36.5 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 27 37 .. .. .. ..@ area : num 0.00846 .. .. .. ..@ hole : logi FALSE .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 27 26.9 27 27 36.9 .. .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 23.7 39.1 ..
.. .. .. ..@ area : num 0.00685 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.7 23.6 23.8 23.7 39.1 .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.4 37.4 .. .. .. ..
..@ area : num 0.00621 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 24.4 24.4 24.5 24.4 37.3 .. .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.3 37.6 .. .. .. ..@ area : num
0.00617 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 24.3 24.3 24.4 24.3 37.5 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 24.7 37 .. .. .. ..@ area : num 0.00567 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 24.7
24.6 24.8 24.7 36.9 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 27.8 36.6 .. .. .. ..@ area : num 0.00564 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 27.9 27.8 27.9 27.9
36.5 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 25.4 37.5 .. .. .. ..@ area : num 0.00559 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.4 25.3 25.5 25.4 37.4 .. .. .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 23.5 38
.. .. .. ..@ area : num 0.00544 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.5 23.4 23.5 23.5 37.9 .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.4 36.4 .. .. .. ..
..@ area : num 0.00518 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 25.5 25.4 25.5 25.5 36.3 .. .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.4 36.7 .. .. .. ..@ area :
num 0.00503 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] 25.4 25.3 25.4 25.4 36.7 .. .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.9 37.4 .. .. .. ..@ area : num 0.00501
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 25 24.9 24.9 25 37.4 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 23.5 37.7 .. .. .. ..@ area : num 0.00491 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.5 23.4
23.6 23.5 37.7 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] 20.7 38.4 .. .. .. ..@ area : num 0.00483 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 20.7 20.6 20.6 20.7 38.3 ..
.. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
25.8 36.8 .. .. .. ..@ area : num 0.00459 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.8 25.7 26 25.8 36.8 .. .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 27.4 36.4 .. .. .. ..
..@ area : num 0.00394 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 27.4 27.3 27.4 27.4 36.4 .. .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 26.8 37.2 .. .. .. ..@ area : num
0.00383 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 26.9 26.8 26.9 26.9 37.1 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with

```

```

5 slots .. .. .. ..@ labpt : num [1:2] 26.9 35.4 .. .. .. ..@ area : num 0.00374 .. .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
26.9 26.9 27 26.9 35.4 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. ..@ labpt : num [1:2] 24.5 37.1 .. .. .. ..@ area : num 0.00348 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 24.5 24.5 24.4
24.5 37.2 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 23.9 39.2 .. .. .. ..@ area : num 0.00321 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.9 24 24 23.9 39.1 ... .. .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 23.5 39.2
.. .. .. ..@ area : num 0.003 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.5 23.4 23.5 23.5 39.2 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.1 37 .. .. .. ..@
area : num 0.00257 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] 25.1 25 25.1 25.1 37 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25 39.5 .. .. .. ..@ area : num 0.00251
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 25 25 25.1 25 39.5 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 25.6 38.6 .. .. .. ..@ area : num 0.00251 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.6 25.5 25.6
25.6 38.5 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 25.1 36.7 .. .. .. ..@ area : num 0.0024 .. .. .. ..@ hole : logi FALSE .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.1 25.1 25.2 25.1 36.6 ... .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.8 36.4
.. .. .. ..@ area : num 0.00219 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 25.8 25.7 25.8 25.8 36.3 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.1 34.8 .. .. .. ..@
area : num 0.002 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] 24.1 24.1 24 24.1 34.9 ... .. .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 24.9 36.6 .. .. .. ..@ area : num 0.0019
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 25 24.8 24.9 25 36.6 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 24.5 36.8 .. .. .. ..@ area : num 0.00146 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 24.6 24.5
24.6 24.6 36.8 ... .. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] 21.8 36.7 .. .. .. ..@ area : num 0.00119 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:5, 1:2] 21.8 21.8 21.8 21.8 21.8 ...
.. .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
23.3 35.9 .. .. .. ..@ area : num 0.00115 .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.3 23.3 23.3 23.3 35.8 ... .. .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 23.5 37.3 ..
.. .. ..@ area : num 0.00107 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 23.4 23.4 23.6 23.4 37.3 ... .. .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 25.5 36.8 .. .. .. ..@
area : num 0.000988 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. ..@ coords : num [1:4, 1:2] 25.5 25.4 25.5 25.5 36.8 ... .. .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 20.2 39.2 .. .. .. ..@ area :
num 0.000934 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@
coords : num [1:4, 1:2] 20.2 20.1 20.1 20.2 39.2 ... .. .. .. .$ :Formal class 'Polygon' [package

```



```
"sp") with 5 slots ... ..@ labpt : num [1:2] 23.5 37.5 ... ..@ area : num 0.000903
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords :
num [1:4, 1:2] 23.5 23.4 23.5 23.5 37.5 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] 25.6 36.9 ... ..@ area : num 0.000881 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
25.7 25.6 25.7 25.7 36.9 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..
... ..@ labpt : num [1:2] 23.1 37.3 ... ..@ area : num 0.000857 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 23.2 23.1 23.2
23.2 37.2 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] 24.6 36.8 ... ..@ area : num 0.000805 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 24.7 24.6 24.7 24.7 36.7 ...
... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
25.8 37.1 ... ..@ area : num 0.000724 ... ..@ hole : logi FALSE ... ..
..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 25.8 25.8 25.8 25.8 37.1 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 21.7 36.8 ..
... ..@ area : num 0.000698 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 21.7 21.7 21.7 21.7 36.7 ... ..$. :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 19.4 39.9 ... ..@
area : num 0.000632 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 19.4 19.4 19.4 19.4 39.8 ... ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 20.9 38.6 ... ..@ area :
num 0.000489 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@
coords : num [1:4, 1:2] 20.9 20.9 20.9 20.9 38.5 ... ..$. :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] 26.8 37.2 ... ..@ area : num 0.00015 ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4,
1:2] 26.8 26.8 26.8 26.8 37.2 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 25.4 36.4 ... ..@ area : num 0.000114 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 25.4 25.4 25.4
25.4 36.4 ... ..@ plotOrder: int [1:68] 1 2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] 22.6
39.5 ... ..@ ID : chr "GRC" ... ..@ area : num 13.2 ...$. :Formal class 'Polygons' [package
"sp"] with 5 slots ... ..@ Polygons :List of 1 ... ..$. :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] -90.3 15.7 ... ..@ area : num 9.02 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:17, 1:2]
-90.6 -91.4 -92.2 -91.7 -90.4 ... ..@ plotOrder: int 1 ... ..@ labpt : num [1:2] -90.3 15.7 ..
... ..@ ID : chr "GTM" ... ..@ area : num 9.02 ...$. :Formal class 'Polygons' [package "sp"]
with 5 slots ... ..@ Polygons :List of 1 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] -10.9 10.4 ... ..@ area : num 20.3 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:39, 1:2]
-13.6 -14.7 -14.7 -15 -14.7 ... ..@ plotOrder: int 1 ... ..@ labpt : num [1:2] -10.9 10.4 ..
... ..@ ID : chr "GIN" ... ..@ area : num 20.3 ...$. :Formal class 'Polygons' [package "sp"]
with 5 slots ... ..@ Polygons :List of 2 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] -58.97 4.75 ... ..@ area : num 17.1 ... ..
..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:28, 1:2]
-59.8 -58.5 -58.6 -58.3 -57.2 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -58.4 6.94 ... ..@ area : num 0.00331 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] -58.5 -58.4
-58.3 -58.5 6.9 ... ..@ plotOrder: int [1:2] 1 2 ... ..@ labpt : num [1:2] -58.97 4.75 ... ..
..@ ID : chr "GUY" ... ..@ area : num 17.1 ...$. :Formal class 'Polygons' [package "sp"] with 5
```

```

slots .. .. @ Polygons :List of 5 .. .. .$. :Formal class 'Polygon' [package "sp"] with 5 slots
.. .. .. @ labpt : num [1:2] -72.7 18.9 .. .. .. @ area : num 2.42 .. .. .. @ hole
: logi FALSE .. .. .. @ ringDir: int 1 .. .. .. @ coords : num [1:14, 1:2] -72.7 -71.8
-71.7 -72 -71.8 .. .. .. $. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @
labpt : num [1:2] -73 18.8 .. .. .. @ area : num 0.0282 .. .. .. @ hole : logi FALSE ..
.. .. .. @ ringDir: int 1 .. .. .. @ coords : num [1:4, 1:2] -72.8 -73.3 -72.9 -72.8 18.7
.. .. .. $. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num
[1:2] -72.8 20 .. .. .. @ area : num 0.0109 .. .. .. @ hole : logi FALSE .. .. ..
.. @ ringDir: int 1 .. .. .. @ coords : num [1:4, 1:2] -72.6 -73 -72.8 -72.6 20 .. .. .. $.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] -73.7 18.1 ..
.. .. .. @ area : num 0.00182 .. .. .. @ hole : logi FALSE .. .. .. @ ringDir: int
1 .. .. .. @ coords : num [1:4, 1:2] -73.6 -73.7 -73.7 -73.6 18.1 .. .. .. $. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] -73.8 18.6 .. .. .. @
area : num 0.00167 .. .. .. @ hole : logi TRUE .. .. .. @ ringDir: int -1 .. .. ..
.. @ coords : num [1:4, 1:2] -73.7 -73.7 -73.8 -73.7 18.6 .. .. .. @ plotOrder: int [1:5] 1 2 3
4 5 .. .. .. @ labpt : num [1:2] -72.7 18.9 .. .. .. @ ID : chr "HTI" .. .. .. @ area : num 2.46 ..
.. $. :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. @ Polygons :List of 8 .. .. .. $.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] -86.7 14.8 ..
.. .. .. @ area : num 9.54 .. .. .. @ hole : logi FALSE .. .. .. @ ringDir: int 1
.. .. .. @ coords : num [1:23, 1:2] -85.8 -84.3 -83.9 -84.2 -84.1 .. .. .. $. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] -86.4 16.4 .. .. .. @
area : num 0.00907 .. .. .. @ hole : logi FALSE .. .. .. @ ringDir: int 1 .. .. ..
.. @ coords : num [1:4, 1:2] -86.6 -86.4 -86.3 -86.6 16.3 .. .. .. $. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] -85.9 16.5 .. .. .. @ area : num
0.00266 .. .. .. @ hole : logi FALSE .. .. .. @ ringDir: int 1 .. .. .. @ coords
: num [1:4, 1:2] -85.9 -85.9 -85.8 -85.9 16.4 .. .. .. $. :Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .. @ labpt : num [1:2] -87.6 13.3 .. .. .. @ area : num 0.00265 .. ..
.. @ hole : logi FALSE .. .. .. @ ringDir: int 1 .. .. .. @ coords : num [1:4, 1:2]
-87.6 -87.6 -87.7 -87.6 13.4 .. .. .. $. :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. @ labpt : num [1:2] -86.9 16.1 .. .. .. @ area : num 0.00189 .. .. .. @ hole :
logi FALSE .. .. .. @ ringDir: int 1 .. .. .. @ coords : num [1:4, 1:2] -86.9 -87 -86.9
-86.9 16.1 .. .. .. $. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt
: num [1:2] -87.6 13.3 .. .. .. @ area : num 0.00106 .. .. .. @ hole : logi FALSE ..
.. .. @ ringDir: int 1 .. .. .. @ coords : num [1:4, 1:2] -87.6 -87.7 -87.6 -87.6 13.2 ..
.. .. $. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2]
-83.9 17.4 .. .. .. @ area : num 7.23e-05 .. .. .. @ hole : logi FALSE .. .. .. @
ringDir: int 1 .. .. .. @ coords : num [1:4, 1:2] -83.9 -83.9 -83.9 -83.9 17.4 .. .. .. $.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] -83.9 17.4 ..
.. .. @ area : num 5.21e-05 .. .. .. @ hole : logi FALSE .. .. .. @ ringDir:
int 1 .. .. .. @ coords : num [1:4, 1:2] -83.9 -84 -83.9 -83.9 17.4 .. .. .. @ plotOrder: int
[1:8] 1 2 3 4 5 6 7 8 .. .. .. @ labpt : num [1:2] -86.7 14.8 .. .. .. @ ID : chr "HND" .. .. .. @
area : num 9.56 .. .. $. :Formal class 'Polygons' [package "sp"] with 5 slots .. .. .. @ Polygons :List
of 19 .. .. .. $. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num
[1:2] 16.4 45.2 .. .. .. @ area : num 5.81 .. .. .. @ hole : logi FALSE .. .. ..
.. @ ringDir: int 1 .. .. .. @ coords : num [1:22, 1:2] 16.6 16.6 17.7 18.8 19 .. .. .. $.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. @ labpt : num [1:2] 17.8 42.8 ..
.. .. @ area : num 0.124 .. .. .. @ hole : logi FALSE .. .. .. @ ringDir: int 1 ..
.. .. @ coords : num [1:6, 1:2] 17.3 17.6 18.5 18.5 17 .. .. .. $. :Formal class 'Polygon'

```

```
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 14.6 45.1 .. .. .. ..@ area : num
0.0339 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 14.8 14.4 14.5 14.8 44.9 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 14.4 44.9 .. .. .. ..@ area : num 0.0318 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:6, 1:2] 14.5
14.5 14.3 14.4 14.3 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 16.7 43.2 .. .. .. ..@ area : num 0.0214 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 16.6 17.2 16.4 16.6
43.2 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 16.7 43.3 .. .. .. ..@ area : num 0.0179 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 16.9 16.4 16.8 16.9 43.3 ... .. .. ..
..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 15.1 44
.. .. .. ..@ area : num 0.0131 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 14.9 15.2 15.1 14.9 44.2 ... .. .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 14.4 44.6 .. .. .. ..
..@ area : num 0.00753 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 14.5 14.4 14.3 14.5 44.5 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 17.5 42.8 .. .. .. ..@ area : num
0.0058 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 17.7 17.3 17.4 17.7 42.7 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 14.8 44.8 .. .. .. ..@ area : num 0.00525 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 14.8
14.9 14.7 14.8 44.8 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 16.2 43.1 .. .. .. ..@ area : num 0.00486 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 16.2 16.1 16.3 16.2
43 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 16.3 43.4 .. .. .. ..@ area : num 0.00337 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 16.4 16.2 16.3 16.4 43.3 ... .. .. ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 15.4 44 .. ..
..@ area : num 0.00335 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] 15.4 15.3 15.4 15.4 43.9 ... .. .. ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 14.9 44.5 .. .. .. ..@ area : num
0.00325 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 14.8 14.7 15.2 14.8 44.6 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 15.2 44.1 .. .. .. ..@ area : num 0.00289 .. .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
15.3 15.1 15.2 15.3 44 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
..@ labpt : num [1:2] 16.9 42.8 .. .. .. ..@ area : num 0.00265 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 16.9 16.8 16.9 16.9
42.7 ... .. .. ..$. :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 15.3 43.8 .. .. .. ..@ area : num 0.00103 .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 15.3 15.4 15.2 15.3 43.8 ... .. .. ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 15.7 43.7 ..
.. .. .. ..@ area : num 0.000856 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 15.7 15.6 15.7 15.7 43.6 ... .. .. ..$. :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 16.9 43 .. .. .. ..@
area : num 4.81e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:4, 1:2] 16.8 17.2 16.6 16.8 43 ... .. .. ..@ plotOrder: int [1:19] 1 2 3 4 5 6 7 8
```

```

9 10 ... ..@ labpt : num [1:2] 16.4 45.2 .. ..@ ID : chr "HRV" .. ..@ area : num 6.09
.. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 1 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 19.4 47.2 ..
.. ..@ area : num 11.1 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:19, 1:2] 18.8 17.7 16.6 16.1 16.5 .. ..@ plotOrder: int 1 ..
..@ labpt : num [1:2] 19.4 47.2 .. ..@ ID : chr "HUN" .. ..@ area : num 11.1 .. ..$ :Formal class
'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 1 .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -18.6 65 .. ..@
area : num 18.4 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
..@ coords : num [1:60, 1:2] -15.1 -14.6 -14.8 -14.3 -14.6 .. ..@ plotOrder: int 1 ..
labpt : num [1:2] -18.6 65 .. ..@ ID : chr "ISL" .. ..@ area : num 18.4 .. ..$ :Formal class
'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 46 .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 79.6 22.9 .. ..@
area : num 277 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:163, 1:2] 78.1 78.3 79 78.8 79.5 .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] 92.7 11.8 .. ..@ area : num 0.0669 ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4,
1:2] 92.7 92.7 92.5 92.7 12.2 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. ..@ labpt : num [1:2] 93 13.2 .. ..@ area : num 0.0521 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 93.1 92.8 93
93.1 13.2 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 92.9 12.6 .. ..@ area : num 0.0518 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 92.9 93 92.8 92.9 12.9 ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 93.8
6.99 .. ..@ area : num 0.041 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 93.91 93.82 93.67 93.91 7.03 .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 92.4 10.7 .. ..
.. ..@ area : num 0.0282 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] 92.5 92.3 92.5 92.5 10.5 .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] 88.1 21.7 .. ..@ area : num
0.0114 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords :
num [1:4, 1:2] 88.1 88 88.1 88.1 21.6 .. ..$ :Formal class 'Polygon' [package "sp"] with 5
slots .. ..@ labpt : num [1:2] 92.8 12.2 .. ..@ area : num 0.0105 .. ..
..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 92.8
92.9 92.8 92.8 12.3 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
..@ labpt : num [1:2] 93.48 8.12 .. ..@ area : num 0.00743 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 93.49 93.44 93.51
93.49 7.99 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 93.69 7.34 .. ..@ area : num 0.00642 .. ..@ hole : logi FALSE
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 93.64 93.69 93.73 93.64
7.25 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] 93.37 7.92 .. ..@ area : num 0.00601 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 93.45 93.35 93.32 93.45 7.87 ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
92.7 11.4 .. ..@ area : num 0.00546 .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 92.6 92.6 92.7 92.6 11.4 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 88.6 21.8 ..
.. ..@ area : num 0.00526 .. ..@ hole : logi FALSE .. ..@ ringDir:

```

int 1@ coords : num [1:6, 1:2] 88.6 88.6 88.6 88.6 88.6@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 93.1 8.27@ area : num 0.00466@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 93.2 93.1 93.1 93.2 8.2@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 93 12@ area : num 0.00458@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 93.1 92.9 93 93.1 11.9@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 88.9 21.6@ area : num 0.00447@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:6, 1:2] 88.9 88.8 88.8 88.8 88.9@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 92.75 9.18@ area : num 0.0043@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 92.77 92.71 92.76 92.77 9.12@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 72.7 21.6@ area : num 0.0037@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 72.7 72.6 72.8 72.7 21.6@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 80.9 15.8@ area : num 0.00335@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 80.9 80.9 81 80.9 15.7@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 92.7 12.9@ area : num 0.00284@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 92.7 92.7 92.7 92.7 12.8@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 93.54 7.97@ area : num 0.00229@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 93.57 93.5 93.54 93.57 7.93@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 93.1 12.1@ area : num 0.00177@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 93.1 93.1 93.1 93.1 12.1@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 92.3 11.6@ area : num 0.00173@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 92.3 92.2 92.3 92.3 11.5@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 88.1 21.9@ area : num 0.0016@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 88.1 88.1 88.1 88.1 21.8@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 93.6 8.5@ area : num 0.00142@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 93.61 93.6 93.63 93.61 8.43@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 93 13.7@ area : num 0.000998@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 93 93 93 93 13.6@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 73.04 8.28@ area : num 0.000874@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 73.03 73.02 73.08 73.03 8.25@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 92.9 12.4@ area : num 0.000449@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 92.9 92.9 92.9 92.9 12.4@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 72.8 11.2@ area : num 0.000321@ hole : logi FALSE@ ringDir: int 1@ coords : num [1:4, 1:2] 72.8 72.8 72.8 72.8 11.2@\$:Formal class 'Polygon' [package "sp"] with 5 slots@ labpt : num [1:2] 94.3 13.4@ area : num 0.000259@ hole : logi FALSE@ ringDir:

```

int 1 .. .. .. ..@ coords : num [1:4, 1:2] 94.3 94.3 94.3 94.3 13.4 ... .. .. ..$ :Formal class 'Polygon'
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 73.6 10.1 .. .. .. ..@
area : num 0.000235 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 73.6 73.6 73.6 73.6 10.1 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 93.9 12.3 .. .. .. ..@ area : num
0.00022 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 93.9 93.8 93.9 93.9 12.3 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 72.2 10.8 .. .. .. ..@ area : num 0.000193 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
72.2 72.2 72.2 72.2 10.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 86.3 20 .. .. .. ..@ area : num 0.000166 .. .. .. ..@ hole : logi
TRUE .. .. .. ..@ ringDir: int -1 .. .. .. ..@ coords : num [1:4, 1:2] 86.3 86.3 86.3 86.3
20 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 72.6 10.6 .. .. .. ..@ area : num 0.000135 .. .. .. ..@ hole : logi FALSE .. .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 72.6 72.6 72.7 72.6 10.6 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 73 11.5 .. ..
.. .. ..@ area : num 0.00013 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] 73 73 73 73 11.5 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 93.1 12.1 .. .. .. ..@ area : num
8.65e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 93.1 93.1 93.1 93.1 12.1 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 72.3 10.9 .. .. .. ..@ area : num 8.36e-05 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
72.3 72.3 72.3 72.3 10.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 73.7 10.8 .. .. .. ..@ area : num 7.88e-05 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 73.7 73.7 73.7
73.7 10.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 72.7 11.1 .. .. .. ..@ area : num 7.63e-05 .. .. .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 72.7 72.7 72.7 72.7 11.1 ... .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 72.7 11.7
.. .. .. ..@ area : num 6.34e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 72.7 72.7 72.7 72.7 11.7 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 92.9 13.4 .. .. .. ..@
area : num 5.85e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 92.9 92.9 92.9 92.9 13.4 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 72.1 11.2 .. .. .. ..@ area : num
4.92e-05 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 72.1 72.1 72.1 72.1 11.2 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 93.66 7.41 .. .. .. ..@ area : num 4.59e-05 .. .. ..
.. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
93.66 93.65 93.66 93.66 7.41 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 92.8 12.3 .. .. .. ..@ area : num 2.72e-05 .. .. .. ..@
hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 92.8 92.8
92.8 92.8 12.3 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@
labpt : num [1:2] 82.4 16.9 .. .. .. ..@ area : num 9.52e-06 .. .. .. ..@ hole : logi FALSE
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 82.4 82.4 82.4 82.4 16.9 ...
.. .. .. ..@ plotOrder: int [1:46] 1 2 3 4 5 6 7 8 9 10 ... .. .. ..@ labpt : num [1:2] 79.6 22.9 .. ..
.. ..@ ID : chr "IND" .. .. .. ..@ area : num 278 .. ..$ :Formal class 'Polygons' [package "sp"] with 5

```

```

slots .. ..@ Polygons :List of 8 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. ..@ labpt : num [1:2] 54.3 32.6 .. ..@ area : num 156 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:71, 1:2] 45 46.2 46.5
48 48.4 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] 55.9 26.8 .. ..@ area : num 0.0619 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:5, 1:2] 56.2 55.3 55.8 55.8 56.2 .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 55.7 26.9
.. ..@ area : num 0.00566 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 55.7 55.6 55.7 55.7 26.8 .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 54 26.5 .. ..@
area : num 0.00414 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 54 53.9 54 54 26.5 .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] 56.5 27.1 .. ..@ area : num 0.00263 ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:5,
1:2] 56.5 56.4 56.5 56.5 56.5 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. ..@ labpt : num [1:2] 53.2 26.8 .. ..@ area : num 0.0024 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 53.3 53.2 53.2
53.3 26.8 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] 56.4 26.9 .. ..@ area : num 0.00201 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 56.3 56.3 56.4 56.3 26.8 .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 50.3 29.3
.. ..@ area : num 0.00147 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 50.3 50.3 50.3 50.3 29.2 .. ..@ plotOrder: int
[1:8] 1 2 3 4 5 6 7 8 .. ..@ labpt : num [1:2] 54.3 32.6 .. ..@ ID : chr "IRN" .. ..@
area : num 156 .. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List
of 2 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num
[1:2] 35 31.4 .. ..@ area : num 2.19 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:13, 1:2] 35.6 35.6 35.6 35.3 34.9 .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 35.3 31.8 ..
.. ..@ area : num 8.28e-05 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 35.3 35.3 35.2 35.3 31.8 .. ..@ plotOrder: int
[1:2] 1 2 .. ..@ labpt : num [1:2] 35 31.4 .. ..@ ID : chr "ISR" .. ..@ area : num 2.19
.. .. .$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 24 .. ..
.$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 12.2 43.5
.. ..@ area : num 27.9 .. ..@ hole : logi FALSE .. ..@ ringDir: int
1 .. ..@ coords : num [1:52, 1:2] 12.1 12.4 13.7 13.4 13.7 .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 9.05 40.11 .. ..@
area : num 2.51 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:9, 1:2] 9.51 9.83 9.57 9.02 8.86 .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] 14.2 37.6 .. ..@ area : num 2.4 ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:8,
1:2] 15.5 15.1 15.3 15.1 12.4 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. ..@ labpt : num [1:2] 10.3 42.8 .. ..@ area : num 0.0223 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 10.4 10.4 10.1
10.4 42.8 .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 8.29 41.06 .. ..@ area : num 0.00428 .. ..@ hole : logi FALSE ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 8.34 8.22 8.32 8.34 41.06 ..
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]

```

```

12 36.8 .. .. .. ..@ area : num 0.00398 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 12 11.9 12 12 36.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 8.27 39.15 .. .. .. ..
.. ..@ area : num 0.00367 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. ..@ coords : num [1:4, 1:2] 8.29 8.22 8.3 8.29 39.09 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 12.5 43.9 .. .. .. ..@ area : num
0.00354 .. .. .. ..@ hole : logi TRUE .. .. .. ..@ ringDir: int -1 .. .. .. ..@ coords :
num [1:4, 1:2] 12.5 12.5 12.4 12.5 43.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 12.4 45.4 .. .. .. ..@ area : num 0.00227 .. .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
12.4 12.3 12.4 12.4 45.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 13.9 40.7 .. .. .. ..@ area : num 0.00195 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 14 13.9 13.9
14 40.7 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 14.9 38.5 .. .. .. ..@ area : num 0.00185 .. .. .. ..@ hole : logi FALSE .. ..
.. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 15 14.9 15 15 38.4 ... .. .. ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 14.8 38.6
.. .. .. ..@ area : num 0.00172 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 14.9 14.8 14.9 14.9 38.5 ... .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 9.82 43.04 .. .. .. ..@
area : num 0.00168 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:5, 1:2] 9.84 9.81 9.8 9.83 9.84 ... .. .. ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 15 38.4 .. .. .. ..@ area : num 0.00107 ..
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4,
1:2] 15 14.9 15 15 38.4 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..
.. ..@ labpt : num [1:2] 12.3 37.9 .. .. .. ..@ area : num 0.000946 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 12.4 12.3 12.3 12.4
37.9 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num
[1:2] 10.9 42.4 .. .. .. ..@ area : num 0.000918 .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 10.9 10.9 10.9 10.9 42.3 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 13 40.9 .. ..
.. .. ..@ area : num 0.000735 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int
1 .. .. .. ..@ coords : num [1:4, 1:2] 13 13 13 13 40.9 ... .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 15.2 38.8 .. .. .. ..@ area : num
0.00067 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :
num [1:4, 1:2] 15.2 15.2 15.2 15.2 38.8 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 14.2 40.6 .. .. .. ..@ area : num 0.000647 .. .. ..
.. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
14.2 14.3 14.2 14.2 40.6 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 12.1 38 .. .. .. ..@ area : num 0.000535 .. .. .. ..@ hole :
logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 12.1 12 12.1
12.1 38 ... .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 10.3 42.3 .. .. .. ..@ area : num 0.000458 .. .. .. ..@ hole : logi FALSE ..
.. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 10.3 10.3 10.3 10.3 42.3 ...
.. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
13.2 38.7 .. .. .. ..@ area : num 0.000419 .. .. .. ..@ hole : logi FALSE .. .. .. ..
.. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 13.2 13.2 13.2 13.2 38.7 ... .. .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 10.1 42.6 ..

```



```
... ..@ area : num 0.000379 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:4, 1:2] 10.1 10.1 10.1 10.1 42.6 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 12.5 41.9 .. ..@
area : num 3.37e-05 .. ..@ hole : logi TRUE .. ..@ ringDir: int -1 .. ..
..@ coords : num [1:4, 1:2] 12.4 12.5 12.5 12.4 41.9 ... ..@ plotOrder: int [1:24] 1 2 3 4 5 6 7
8 9 10 ... ..@ labpt : num [1:2] 12.2 43.5 .. ..@ ID : chr "ITA" .. ..@ area : num 32.9
.. ..$ :Formal class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 3 .. ..$
:Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -5.54 7.6 ..
.. ..@ area : num 26.6 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:32, 1:2] -4.79 -5.32 -5 -7.53 -7.42 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] -4.31 5.23 .. ..@ area : num
0.0223 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords :
num [1:4, 1:2] -4.79 -4.15 -4 -4.79 5.17 ... ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. ..@ labpt : num [1:2] -3.12 5.1 .. ..@ area : num 0.000813 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2]
-3.1 -3.1 -3.17 -3.1 5.11 ... ..@ plotOrder: int [1:3] 1 2 3 .. ..@ labpt : num [1:2] -5.54
7.6 .. ..@ ID : chr "CIV" .. ..@ area : num 26.6 .. ..$ :Formal class 'Polygons' [package
"sp"] with 5 slots .. ..@ Polygons :List of 1 .. ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots .. ..@ labpt : num [1:2] 43.8 33.1 .. ..@ area : num 42.4 .. ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:34, 1:2]
45.8 45.4 46.2 46.1 47.4 ... ..@ plotOrder: int 1 .. ..@ labpt : num [1:2] 43.8 33.1 .. ..
..@ ID : chr "IRQ" .. ..@ area : num 42.4 .. ..$ :Formal class 'Polygons' [package "sp"] with 5
slots .. ..@ Polygons :List of 67 .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. ..@ labpt : num [1:2] 138 36.6 .. ..@ area : num 23.4 .. ..@ hole :
logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:57, 1:2] 141 142 142
141 141 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt :
num [1:2] 142.5 43.3 .. ..@ area : num 8.88 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:22, 1:2] 142 144 145 145 145 ... ..
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 130.9
32.6 .. ..@ area : num 3.91 .. ..@ hole : logi FALSE .. ..@ ringDir:
int 1 .. ..@ coords : num [1:24, 1:2] 131 132 132 132 132 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 133.4 33.6 .. ..@
area : num 1.87 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
..@ coords : num [1:10, 1:2] 134 135 134 134 133 ... ..$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. ..@ labpt : num [1:2] 128 26.5 .. ..@ area : num 0.151 ..
.. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num
[1:5, 1:2] 128 128 128 128 128 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
.. ..@ labpt : num [1:2] 129.4 28.3 .. ..@ area : num 0.0619 .. ..@
hole : logi FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 129.7
129.4 129.1 129.7 28.5 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..
.. ..@ labpt : num [1:2] 134.8 34.4 .. ..@ area : num 0.0364 .. ..@ hole : logi
FALSE .. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 134.8 134.7 135
134.8 34.2 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt
: num [1:2] 129.4 34.5 .. ..@ area : num 0.0241 .. ..@ hole : logi FALSE .. ..
.. ..@ ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 129.3 129.3 129.5 129.3 34.3 ...
.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2]
128.7 32.7 .. ..@ area : num 0.0237 .. ..@ hole : logi FALSE .. ..@
ringDir: int 1 .. ..@ coords : num [1:4, 1:2] 128.9 128.6 128.7 128.9 32.6 ... ..$
```

```

:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 130.1 32.4
.. .. .. ..@ area : num 0.0222 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 130 130.2 130.2 130 32.2 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 124.2 24.4 .. .. .. ..@
area : num 0.0217 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..
..@ coords : num [1:5, 1:2] 124 124 124 124 124 ... .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 130.5 30.3 .. .. .. ..@ area : num 0.0213
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 130.6 130.4 130.7 130.6 30.2 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 138.4 38.1 .. .. .. ..@ area : num 0.0196 .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
138 138 139 138 38 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
..@ labpt : num [1:2] 130.9 30.6 .. .. .. ..@ area : num 0.0174 .. .. .. ..@ hole : logi
FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 130.9 130.9 131.1
130.9 30.4 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt
: num [1:2] 129.3 34.2 .. .. .. ..@ area : num 0.0154 .. .. .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 129.2 129.2 129.3 129.2 34.1 ...
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
130.3 32.4 .. .. .. ..@ area : num 0.0131 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 130.4 130.2 130.4 130.4 32.4 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 123.8 24.3 ..
.. .. ..@ area : num 0.013 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1
.. .. .. ..@ coords : num [1:4, 1:2] 123.9 123.7 123.9 123.9 24.3 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 125.3 24.8 .. .. .. ..@
area : num 0.0116 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
..@ coords : num [1:5, 1:2] 125 125 125 125 125 ... .. .. .$ :Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 133.3 36.2 .. .. .. ..@ area : num 0.00993
.. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num
[1:4, 1:2] 133.3 133.4 133.3 133.3 36.3 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. ..@ labpt : num [1:2] 134.3 34.5 .. .. .. ..@ area : num 0.00983 .. .. ..
..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2]
134.4 134.2 134.4 134.4 34.4 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. ..@ labpt : num [1:2] 129 27.8 .. .. .. ..@ area : num 0.00932 .. .. .. ..@ hole
: logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 129 128.9 129
129 27.7 ... .. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt :
num [1:2] 139.5 42.2 .. .. .. ..@ area : num 0.00903 .. .. .. ..@ hole : logi FALSE .. ..
..@ ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 139.6 139.4 139.4 139.6 42.2 ...
.. .. .$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2]
141.2 45.2 .. .. .. ..@ area : num 0.0085 .. .. .. ..@ hole : logi FALSE .. .. .. ..@
ringDir: int 1 .. .. .. ..@ coords : num [1:4, 1:2] 141.3 141.1 141.3 141.3 45.1 ... .. .. .$
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 141 45.4 ..
.. .. ..@ area : num 0.00832 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir:
int 1 .. .. .. ..@ coords : num [1:4, 1:2] 141 141 141.1 141 45.3 ... .. .. .$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 129.5 33.3 .. .. .. ..@
area : num 0.00752 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. ..
..@ coords : num [1:4, 1:2] 129.4 129.5 129.6 129.4 33.2 ... .. .. .$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. ..@ labpt : num [1:2] 132.4 34.2 .. .. .. ..@ area : num
0.0073 .. .. .. ..@ hole : logi FALSE .. .. .. ..@ ringDir: int 1 .. .. .. ..@ coords :

```

```

num [1:4, 1:2] 132.4 132.4 132.5 132.4 34.1 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] 128.6 27.4 ... ..@ area : num 0.00626 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
128.6 128.5 128.7 128.6 27.4 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 129.7 33.8 ... ..@ area : num 0.00575 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129.8
129.7 129.7 129.8 33.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 132.5 34.1 ... ..@ area : num 0.00574 ... ..@ hole :
logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:5, 1:2] 133 133 132
133 133 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] 129.2 28.1 ... ..@ area : num 0.005 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129.3 129.2 129.2 129.3 28.1 ...
... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
129.7 31.7 ... ..@ area : num 0.00489 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129.7 129.7 129.8 129.7 31.6 ... ..$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 139.8 33.1 ..
... ..@ area : num 0.00443 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1
... ..@ coords : num [1:4, 1:2] 140 140 140 140 33 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 137 37.1 ... ..@ area : num
0.00394 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] 137.1 137 136.9 137.1 37.1 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] 139.4 34.7 ... ..@ area : num 0.00373 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
139.5 139.4 139.4 139.5 34.7 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 133 36.1 ... ..@ area : num 0.00364 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 133 133 133
133 36 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] 130 28.3 ... ..@ area : num 0.00353 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 130 129.9 130 130 28.3 ... ..
..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 133 34.2
... ..@ area : num 0.00348 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 133 133 133.1 133 34.2 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 126.7 26.3 ... ..@
area : num 0.00347 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 126.8 126.8 126.7 126.8 26.4 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 130.2 32.2 ... ..@ area : num
0.00344 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords :
num [1:4, 1:2] 130.2 130.1 130.2 130.2 32.1 ... ..$ :Formal class 'Polygon' [package "sp"]
with 5 slots ... ..@ labpt : num [1:2] 145.3 43.6 ... ..@ area : num 0.00284 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
145.3 145.2 145.4 145.3 43.5 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 132.3 33.9 ... ..@ area : num 0.00279 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 132.3
132.2 132.5 132.3 33.9 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 129 33 ... ..@ area : num 0.00236 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129 129 129 129
33 ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num
[1:2] 139.5 34.1 ... ..@ area : num 0.00226 ... ..@ hole : logi FALSE ... ..

```

```

... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 140 139 140 140 34 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 139.3 34.4 ..
... ..@ area : num 0.00175 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] 139.3 139.2 139.3 139.3 34.3 ... ..$. :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 133.1 36.1 ... ..@
area : num 0.00167 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 133 133 133 133 36 ... ..$. :Formal class 'Polygon' [package
"sp"] with 5 slots ... ..@ labpt : num [1:2] 142.2 27.1 ... ..@ area : num 0.00153
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num
[1:4, 1:2] 142 142 142 142 27 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 129.9 29.8 ... ..@ area : num 0.00149 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129.9
129.9 129.9 129.9 29.9 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 129.8 33.4 ... ..@ area : num 0.00113 ... ..@ hole : logi
TRUE ... ..@ ringDir: int -1 ... ..@ coords : num [1:4, 1:2] 129.8 129.9 129.8
129.8 33.3 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt
: num [1:2] 141.3 24.8 ... ..@ area : num 0.00111 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 141.3 141.3 141.4 141.3 24.7 ...
... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2]
132.2 33.8 ... ..@ area : num 0.00108 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 132.3 132.2 132.2 132.3 33.8 ... ..$.
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 131.2 25.8
... ..@ area : num 0.00105 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 131.2 131.2 131.3 131.2 25.8 ... ..$. :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 142.1 26.7 ... ..
... ..@ area : num 0.001 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 142.2 142.1 142.2 142.2 26.6 ... ..$. :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 123 24.5 ... ..@ area : num
0.000985 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] 123 122.9 123 123 24.4 ... ..$. :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] 139.6 33.9 ... ..@ area : num 0.00089 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
139.6 139.6 139.6 139.6 33.8 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 129.7 29.6 ... ..@ area : num 0.000879 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 129.7
129.7 129.7 129.7 29.6 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 143.9 44.2 ... ..@ area : num 0.000718 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 144 143.9
143.8 144 44.1 ... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@
labpt : num [1:2] 133 36 ... ..@ area : num 0.000551 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 133 133 133 133 36 ... ..
... ..$. :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 130
30 ... ..@ area : num 0.000464 ... ..@ hole : logi FALSE ... ..@
ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 130 130 130 130 30 ... ..$. :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 141.3 25.4 ... ..
... ..@ area : num 0.000418 ... ..@ hole : logi FALSE ... ..@ ringDir: int
1 ... ..@ coords : num [1:4, 1:2] 141.3 141.3 141.3 141.3 25.4 ... ..$. :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 131.3 24.5 ... ..

```

```

... ..@ area : num 0.000359 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ..
... ..@ coords : num [1:4, 1:2] 131.3 131.2 131.3 131.3 24.5 ... ..@
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 142.2 27.2 ... ..@
area : num 0.000342 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 142.2 142.2 142.2 142.2 27.1 ... ..@
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 154 24.3 ... ..@ area : num
0.000232 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords
: num [1:4, 1:2] 154 153.9 154 154 24.3 ... ..@
$ :Formal class 'Polygon' [package "sp"] with
5 slots ... ..@ labpt : num [1:2] 140.3 30.5 ... ..@ area : num 0.00022 ... ..
... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2]
140.3 140.3 140.3 140.3 30.5 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 142.2 27.6 ... ..@ area : num 0.000209 ... ..@
hole : logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 142.2
142.2 142.2 142.2 27.6 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 140.9 27.2 ... ..@ area : num 0.000138 ... ..@ hole
: logi FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 140.9 140.9
140.9 140.9 27.2 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 142.1 27.7 ... ..@ area : num 0.000137 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 142.1 142.1 142.1
142.1 27.7 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 140 31.9 ... ..@ area : num 0.000103 ... ..@ hole : logi FALSE ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:4, 1:2] 140 140 140 140 31.9 ... ..
..@ plotOrder: int [1:67] 1 2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] 138 36.6 ... ..@ ID
: chr "JPN" ... ..@ area : num 38.7 ... ..@
$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
... ..@ Polygons :List of 1 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] -77.3 18.1 ... ..@ area : num 0.753 ... ..@ hole : logi
FALSE ... ..@ ringDir: int 1 ... ..@ coords : num [1:6, 1:2] -77.1 -77.7 -78.3
-76.9 -76.2 ... ..@ plotOrder: int 1 ... ..@ labpt : num [1:2] -77.3 18.1 ... ..@ ID : chr
"JAM" ... ..@ area : num 0.753 ... ..@
$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..
..@ Polygons :List of 1 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 36.8 31.2 ... ..@ area : num 8.33 ... ..@ hole : logi FALSE
... ..@ ringDir: int 1 ... ..@ coords : num [1:14, 1:2] 35 35 35.5 35.6 35.6 ... ..
..@ plotOrder: int 1 ... ..@ labpt : num [1:2] 36.8 31.2 ... ..@ ID : chr "JOR" ... ..@
area : num 8.33 ... ..@
$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
... ..@ Polygons :List
of 2 ... ..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num
[1:2] 37.824 0.539 ... ..@ area : num 47 ... ..@ hole : logi FALSE ... ..@
..@ ringDir: int 1 ... ..@ coords : num [1:26, 1:2] 35.9 37 38.1 39.5 40.8 ... ..@
$
:Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 41.05 -2.11 ..
... ..@ area : num 0.00936 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1
... ..@ coords : num [1:4, 1:2] 41.14 40.95 41.06 41.14 -2.12 ... ..@ plotOrder: int
[1:2] 1 2 ... ..@ labpt : num [1:2] 37.824 0.539 ... ..@ ID : chr "KEN" ... ..@ area : num
47 ... ..@
$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
... ..@ Polygons :List of 1 ... ..
..@
$ :Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 74.6
41.4 ... ..@ area : num 21 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:32, 1:2] 80.2 78.1 76.9 76.3 75.7 ... ..@ plotOrder:
int 1 ... ..@ labpt : num [1:2] 74.6 41.4 ... ..@ ID : chr "KGZ" ... ..@ area : num 21 ..
..@
$ :Formal class 'Polygons' [package "sp"] with 5 slots ..
... ..@ Polygons :List of 2 ... ..@
$
:Formal class 'Polygon' [package "sp"] with 5 slots ..
... ..@ labpt : num [1:2] 127.2 40.2 ..

```

```

... ..@ area : num 12.8 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
... ..@ coords : num [1:34, 1:2] 131 131 130 130 128 ... ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. ..@ labpt : num [1:2] 124.9 39.6 .. ..@ area :
num 0.00238 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..@
coords : num [1:4, 1:2] 124.8 124.9 124.9 124.8 39.5 ... ..@ plotOrder: int [1:2] 1 2 ..
..@ labpt : num [1:2] 127.2 40.2 .. ..@ ID : chr "PRK" .. ..@ area : num 12.8 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. ..@ Polygons :List of 42 .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -157.39 1.86 .. ..
.. ..@ area : num 0.0419 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] -157.43 -157.18 -157.57 -157.43 2.02 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.029 0.927 .. ..
.. ..@ area : num 0.00687 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1
.. ..@ coords : num [1:4, 1:2] 173.02 173.08 172.98 173.02 1.01 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 172.99 1.82 .. ..
.. ..@ area : num 0.00629 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] 173.01 172.93 173.03 173.01 1.71 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -159.34 3.86 .. ..
.. ..@ area : num 0.00616 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] -159.34 -159.27 -159.4 -159.34 3.92 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 175.03 -1.51 .. ..
.. ..@ area : num 0.00242 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] 175.04 175 175.05 175.04 -1.55 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -154.97 -4.07 .. ..
.. ..@ area : num 0.00206 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -154.94 -154.96 -155.02 -154.94 -4.05 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 175.97 -1.32 .. ..
.. ..@ area : num 0.00187 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 175.95 176.02 175.93 175.95 -1.28 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 172.8 3.03 .. ..
.. ..@ area : num 0.00185 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 172.87 172.77 172.75 172.87 3.06 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -171.66 -2.82 .. ..
.. ..@ area : num 0.00176 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] -171.63 -171.63 -171.73 -171.63 -2.83 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.85 0.42 .. ..
.. ..@ area : num 0.00166 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 173.831 173.922 173.805 173.831 0.448 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 174.481 -0.747 .. ..
.. ..@ area : num 0.00123 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 ..
.. ..@ coords : num [1:4, 1:2] 174.49 174.458 174.496 174.49 -0.817 ... ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 174.8 -1.2 .. ..
.. ..@ area : num 0.00122 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 174.77 174.72 174.77 174.77 -1.26 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.618 0.188 .. ..
.. ..@ area : num 0.00111 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
.. ..@ coords : num [1:4, 1:2] 173.618 173.604 173.632 173.618 0.134 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 175.58 -1.87 .. ..
.. ..@ area : num 0.00102 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..

```

```
... ..@ coords : num [1:4, 1:2] 175.59 175.55 175.59 175.59 -1.92 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 176.82 -2.64 .. ..
..@ area : num 0.000856 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 176.85 176.77 176.83 176.85 -2.67 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 176.43 -1.37 .. ..
..@ area : num 0.000822 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 176.46 176.39 176.42 176.46 -1.44 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -172.21 -4.51 .. ..
..@ area : num 0.000751 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] -172.19 -172.23 -172.2 -172.19 -4.53 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -155.89 -5.63 .. ..
..@ area : num 0.000745 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] -155.88 -155.93 -155.86 -155.88 -5.64 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -151.8 -11.4 .. ..
..@ area : num 0.000645 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] -151.8 -151.8 -151.8 -151.8 -11.5 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 172.97 1.57 .. ..
..@ area : num 0.000629 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 172.98 172.96 172.96 172.98 1.53 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.33 1.99 .. ..
..@ area : num 0.000565 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 173.34 173.31 173.33 173.34 1.98 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 174.41 -0.615 .. ..
..@ area : num 0.000528 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 174.459 174.377 174.392 174.459 -0.652 ... ..$ :Formal class
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -160.39 4.71 .. ..
..@ area : num 0.000476 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] -160.39 -160.41 -160.38 -160.39 4.69 ... ..$ :Formal class
class 'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.33 1.95 .. ..
..@ area : num 0.00041 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 173.33 173.31 173.35 173.33 1.94 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 172.97 3.28 .. ..
..@ area : num 0.000395 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 172.97 172.96 172.98 172.97 3.25 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] -171.24 -4.45 .. ..
..@ area : num 0.000354 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] -171.23 -171.26 -171.24 -171.23 -4.46 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.11 1.36 .. ..
..@ area : num 0.000331 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 173.13 173.1 173.12 173.13 1.35 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 175.51 -1.78 .. ..
..@ area : num 0.000324 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 175.53 175.49 175.52 175.53 -1.81 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.05 1.42 .. ..
..@ area : num 0.000281 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
... ..@ coords : num [1:4, 1:2] 173.06 173.04 173.03 173.06 1.41 ... ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. ..@ labpt : num [1:2] 173.412 0.217 .. ..
... ..@ area : num 0.000277 .. ..@ hole : logi FALSE .. ..@ ringDir: int 1 .. ..
```

```

... ..@ coords : num [1:4, 1:2] 173.41 173.402 173.426 173.41 0.204 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 172.86 1.85 ... ..
... ..@ area : num 0.000252 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ...
... ..@ coords : num [1:4, 1:2] 172.88 172.83 172.86 172.88 1.84 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -171.08 -3.13 ... ..
..@ area : num 0.000174 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -171.08 -171.09 -171.09 -171.08 -3.14 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -150.23 -9.94 ... ..
..@ area : num 0.000163 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -150.22 -150.23 -150.22 -150.22 -9.95 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 172.93 1.34 ... ..
... ..@ area : num 0.000144 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ..
... ..@ coords : num [1:4, 1:2] 172.94 172.91 172.94 172.94 1.34 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 176 -2.5 ... ..
... ..@ area : num 0.000142 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 176 176 176 176 -2.5 ... ..@$ :Formal class 'Polygon'
[package "sp"] with 5 slots ... ..@ labpt : num [1:2] 173.378 0.254 ... ..@ area
: num 0.000124 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
..@ coords : num [1:4, 1:2] 173.385 173.371 173.377 173.385 0.244 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 173.932 0.307 ... ..
..@ area : num 0.000111 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 173.932 173.924 173.939 173.932 0.298 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -150.2 -9.9 ... ..
... ..@ area : num 0.000102 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -150.23 -150.23 -150.22 -150.23 -9.92 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 174.86 -1.41 ... ..
... ..@ area : num 7.59e-05 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 174.87 174.86 174.85 174.87 -1.41 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] -152.4 -10.1 ... ..
..@ area : num 5.53e-05 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] -152.4 -152.4 -152.4 -152.4 -10.1 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 172.89 1.94 ... ..
..@ area : num 5.36e-05 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 172.89 172.88 172.89 172.89 1.93 ... ..@$ :Formal class
'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 173.01 1.48 ... ..
..@ area : num 7.42e-06 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ... ..
... ..@ coords : num [1:4, 1:2] 173.01 173.02 173 173.01 1.47 ... ..@ plotOrder: int [1:42] 1
2 3 4 5 6 7 8 9 10 ... ..@ labpt : num [1:2] -157.39 1.86 ... ..@ ID : chr "KIR" ... ..@
area : num 0.0873 ..@$ :Formal class 'Polygons' [package "sp"] with 5 slots ... ..@ Polygons
:List of 19 ..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt :
num [1:2] 127.9 36.5 ... ..@ area : num 9.15 ... ..@ hole : logi FALSE ... ..
... ..@ ringDir: int 1 ... ..@ coords : num [1:32, 1:2] 129 129 129 129 128 ... ..
..@$ :Formal class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 126.6
33.4 ... ..@ area : num 0.076 ... ..@ hole : logi FALSE ... ..@ ringDir:
int 1 ... ..@ coords : num [1:4, 1:2] 126.6 126.2 126.9 126.6 33.2 ... ..@$ :Formal
class 'Polygon' [package "sp"] with 5 slots ... ..@ labpt : num [1:2] 128.6 34.8 ... ..
... ..@ area : num 0.0222 ... ..@ hole : logi FALSE ... ..@ ringDir: int 1 ..
... ..@ coords : num [1:4, 1:2] 128.8 128.6 128.5 128.8 34.9 ... ..@$ :Formal class

```



```
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 127.9 34.8 .. .. .@
area : num 0.0182 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .
..@ coords : num [1:5, 1:2] 128 128 128 128 128 ... .. .$.:Formal class 'Polygon' [package
"sp"] with 5 slots .. .. .@ labpt : num [1:2] 126.3 34.5 .. .. .@ area : num 0.0174
.. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num
[1:4, 1:2] 126.2 126.2 126.4 126.2 34.4 ... .. .$.:Formal class 'Polygon' [package "sp"] with
5 slots .. .. .@ labpt : num [1:2] 126.4 37.7 .. .. .@ area : num 0.013 .. .. .
..@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 126.5
126.4 126.4 126.5 37.6 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .
..@ labpt : num [1:2] 126.4 36.5 .. .. .@ area : num 0.00727 .. .. .@ hole : logi
FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 126.4 126.3 126.3
126.4 36.4 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt
: num [1:2] 126.7 34.3 .. .. .@ area : num 0.00493 .. .. .@ hole : logi FALSE ..
.. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 126.8 126.7 126.7 126.8 34.3 ...
.. .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2]
130.9 37.5 .. .. .@ area : num 0.00472 .. .. .@ hole : logi FALSE .. .. .@
ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 130.9 130.8 130.9 130.9 37.5 ... .. .$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 128 34.9 ..
.. .. .@ area : num 0.0038 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int
1 .. .. .@ coords : num [1:4, 1:2] 128.1 128 128 128.1 34.8 ... .. .$.:Formal class
'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 127.2 34.5 .. .. .@
area : num 0.0035 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .
..@ coords : num [1:4, 1:2] 127.2 127.1 127.2 127.2 34.4 ... .. .$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 126.1 35.1 .. .. .@ area :
num 0.00345 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@
coords : num [1:4, 1:2] 126 126 126 126 35 ... .. .$.:Formal class 'Polygon' [package "sp"]
with 5 slots .. .. .@ labpt : num [1:2] 125 38 .. .. .@ area : num 0.00342 .. .. .
..@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2]
124.7 124.6 124.7 124.7 37.9 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots ..
.. .. .@ labpt : num [1:2] 126 34.9 .. .. .@ area : num 0.00295 .. .. .@ hole
: logi FALSE .. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 126.1 126
126.1 126.1 34.9 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@
labpt : num [1:2] 127.8 34.6 .. .. .@ area : num 0.0024 .. .. .@ hole : logi FALSE
.. .. .@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 127.8 127.7 127.8 127.8
34.6 ... .. .$.:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num
[1:2] 126 34.8 .. .. .@ area : num 0.00215 .. .. .@ hole : logi FALSE .. .. .
..@ ringDir: int 1 .. .. .@ coords : num [1:4, 1:2] 126 126 125.9 126 34.8 ... .. .$.
:Formal class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 127.8 34.5
.. .. .@ area : num 0.00194 .. .. .@ hole : logi FALSE .. .. .@ ringDir:
int 1 .. .. .@ coords : num [1:4, 1:2] 127.8 127.7 127.8 127.8 34.5 ... .. .$.:Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 126 34.7 .. .. .
..@ area : num 0.00175 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 ..
.. .. .@ coords : num [1:4, 1:2] 126 125.9 126 126 34.7 ... .. .$.:Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .@ labpt : num [1:2] 126.2 36.8 .. .. .@ area :
num 6.43e-05 .. .. .@ hole : logi FALSE .. .. .@ ringDir: int 1 .. .. .@
coords : num [1:4, 1:2] 126.2 126.2 126.2 126.2 36.8 ... .. .@ plotOrder: int [1:19] 1 2 3 4 5 6
7 8 9 10 ... .. .@ labpt : num [1:2] 127.9 36.5 .. .. .@ ID : chr "KOR" .. .. .@ area : num
9.34 .. .. .$.:Formal class 'Polygons' [package "sp"] with 5 slots .. .. .@ Polygons :List of 4 .. ..
```

```

.. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 47.6
29.3 .. .. .. .. ..@ area : num 1.53 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir:
int 1 .. .. .. .. ..@ coords : num [1:11, 1:2] 47.9 47.9 48.2 47.7 48 ... .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 48.2 29.8 .. .. .. .. ..
..@ area : num 0.0322 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. ..
.. .. .. ..@ coords : num [1:4, 1:2] 48.2 48.2 48.4 48.2 29.6 ... .. .. .. ..$ :Formal class 'Polygon'
[package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 48.3 29.4 .. .. .. .. ..@ area : num
0.00273 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords :
num [1:4, 1:2] 48.4 48.4 48.3 48.4 29.5 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. .. ..@ labpt : num [1:2] 48.1 30 .. .. .. .. ..@ area : num 0.00208 .. .. .. ..
.. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:5, 1:2]
48 48 48 48.1 48 ... .. .. .. ..@ plotOrder: int [1:4] 1 2 3 4 .. .. .. ..@ labpt : num [1:2] 47.6 29.3 ..
.. .. ..@ ID : chr "KWT" .. .. .. ..@ area : num 1.57 .. ..$ :Formal class 'Polygons' [package "sp"]
with 5 slots .. .. .. ..@ Polygons :List of 4 .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with
5 slots .. .. .. .. ..@ labpt : num [1:2] 67.3 48.1 .. .. .. .. ..@ area : num 330 .. .. .. .. ..
..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:129, 1:2]
69.2 70.8 71.3 71 71.2 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. ..
.. .. ..@ labpt : num [1:2] 50.1 45 .. .. .. .. ..@ area : num 0.0162 .. .. .. .. ..@ hole : logi
FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:4, 1:2] 50.1 50 50.1 50.1
44.8 ... .. .. .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num
[1:2] 53 46.3 .. .. .. .. ..@ area : num 0.00921 .. .. .. .. ..@ hole : logi FALSE .. .. .. ..
..@ ringDir: int 1 .. .. .. .. ..@ coords : num [1:5, 1:2] 53 53 53 53.1 53 ... .. .. .. ..$ :Formal
class 'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 50.3 45 .. .. .. ..
..@ area : num 0.00395 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. ..@ coords : num [1:4, 1:2] 50.3 50.3 50.3 50.3 44.9 ... .. .. .. ..@ plotOrder: int [1:4] 1 2 3 4 ..
.. .. ..@ labpt : num [1:2] 67.3 48.1 .. .. .. ..@ ID : chr "KAZ" .. .. .. ..@ area : num 330 .. ..$ :Formal
class 'Polygons' [package "sp"] with 5 slots .. .. .. ..@ Polygons :List of 1 .. .. .. ..$ :Formal class
'Polygon' [package "sp"] with 5 slots .. .. .. .. ..@ labpt : num [1:2] 103.7 18.5 .. .. .. .. ..
..@ area : num 19.6 .. .. .. .. ..@ hole : logi FALSE .. .. .. .. ..@ ringDir: int 1 .. .. .. ..
.. .. ..@ coords : num [1:45, 1:2] 108 107 107 106 106 ... .. .. .. ..@ plotOrder: int 1 .. .. .. ..@
labpt : num [1:2] 103.7 18.5 .. .. .. ..@ ID : chr "LAO" .. .. .. ..@ area : num 19.6 .. .. [list output
truncated] ..@ plotOrder : int [1:246] 145 175 24 209 30 21 9 71 98 8 ... ..@ bbox : num [1:2, 1:2]
-180 -90 180 83.6 .. ..- attr(*, "dimnames")=List of 2 .. .. ..$ : chr [1:2] "x" "y" .. .. ..$ : chr [1:2]
"min" "max" ..@ proj4string:Formal class 'CRS' [package "sp"] with 1 slot .. .. ..@ projargs: chr "
+proj=longlat +ellps=WGS84 +datum=WGS84 +no_defs +towgs84=0,0,0"

```

Details

see `maptools` package

Source

`maptools` package

References

`maptools` package

Examples

```
data(world_country_polygons)
str(world_country_polygons)
```

zplot

*Plotting for 3 dimensional data***Description**

Plots z above xy plane as 3D mountain or 2D contourlines

Usage

```
zplot(x, y, z, DrawTopView = TRUE, NrOfContourLines = 20,
      TwoDplotter = "native", xlim, ylim)
```

Arguments

x	Vector of x-coordinates of the data. If y and z are missing: Matrix containing 3 rows, one for each coordinate
y	Vector of y-coordinates of the data.
z	Vector of z-coordinates of the data.
DrawTopView	Optional: Boolean, if true plot contours otherwise a 3D plot. Default: True
NrOfContourLines	Optional: Numeric. Only used when DrawTopView == True. Number of lines to be drawn in 2D contour plots. Default: 20
TwoDplotter	Optional: String indicating which backend to use for plotting. Possible Values: 'ggplot', 'native', 'plotly'
xlim	
ylim	

Value

If the plotting backend does support it, this will return a handle for the generated plot.

Author(s)

Felix pape

Examples

Index

- *Topic **ABC barplot**
 - ABCbarplot, 6
- *Topic **ABC screepplot**
 - ABCbarplot, 6
- *Topic **ABC_screepplot**
 - ABCbarplot, 6
- *Topic **ABCbarplot**
 - ABCbarplot, 6
- *Topic **Bland-Altman plot**
 - DataVisualizations-package, 3
 - MAplot, 36
- *Topic **Classplot**
 - Classplot, 18
- *Topic **Density Estimation**
 - PDEscatter, 49
- *Topic **DensityPlot**
 - ShepardPDEscatter, 59
- *Topic **Density**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **Dimensionality Reduction**
 - DataVisualizations-package, 3
- *Topic **Distances**
 - InspectDistances, 31
- *Topic **Dual Axis Line Chart**
 - DualaxisLinechart, 23
- *Topic **Dual Axis**
 - DualaxisLinechart, 23
- *Topic **DualAxisLineChart**
 - DualaxisLinechart, 23
- *Topic **DualaxisClassplot**
 - DualaxisClassplot, 22
- *Topic **FCPS**
 - ITS, 35
 - Lsun3D, 35
- *Topic **Germany**
 - Choroplethmap, 8
- *Topic **Heatmap**
 - Heatmap, 28
- *Topic **ITS**
 - ITS, 35
- *Topic **Income Tax Share**
 - ITS, 35
- *Topic **InputDistances**
 - InspectDistances, 31
- *Topic **InspectDistances**
 - InspectDistances, 31
- *Topic **Line Chart**
 - DualaxisLinechart, 23
- *Topic **Lsun3D**
 - Lsun3D, 35
- *Topic **MA plot**
 - MAplot, 36
- *Topic **MAplot**
 - MAplot, 36
- *Topic **MA**
 - MAplot, 36
- *Topic **MD-plot**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **MDplot**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **MD**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **MTY**
 - MTY, 43
- *Topic **Mirrored Density plot**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **Mirrored Density**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **Municipal Income Tax Yield**
 - MTY, 43
- *Topic **PDE**
 - DataVisualizations-package, 3

- MDplot, 37
- MDplot4multiplevectors, 40
- PDEscatter, 49
- StatPDEdensity, 64
- *Topic **Pareto Density Estimation**
 - StatPDEdensity, 64
- *Topic **Pie chart**
 - DataVisualizations-package, 3
- *Topic **PixelMatrixPlot**
 - Pixelmatrix, 52
- *Topic **Pixelmatrix**
 - Pixelmatrix, 52
- *Topic **ProductRatioPlotAnalysis**
 - PlotProductratio, 56
- *Topic **ProductRatioPlot**
 - PlotProductratio, 56
- *Topic **ScatterPlot**
 - Sheparddiagram, 58
- *Topic **Shepard diagram**
 - Sheparddiagram, 58
- *Topic **ShepardDensityPlot**
 - ShepardPDEscatter, 59
- *Topic **ShepardDiagram**
 - Sheparddiagram, 58
 - ShepardPDEscatter, 59
- *Topic **ShepardPDEscatter**
 - ShepardPDEscatter, 59
- *Topic **ShepardScatterPlot**
 - Sheparddiagram, 58
- *Topic **Shepard**
 - Sheparddiagram, 58
 - ShepardPDEscatter, 59
- *Topic **SignedLog**
 - SignedLog, 60
- *Topic **Silhouette plot**
 - Silhouetteplot, 61
- *Topic **Silhouettes**
 - Silhouetteplot, 61
- *Topic **Silhouette**
 - Silhouetteplot, 61
- *Topic **Zipf**
 - PlotProductratio, 56
- *Topic **bar plot**
 - ABCbarplot, 6
- *Topic **barplot**
 - ABCbarplot, 6
- *Topic **bar**
 - ABCbarplot, 6
- *Topic **bean plot**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **beanplot**
 - DataVisualizations-package, 3
- *Topic **box plot**
 - MDplot, 37
 - MDplot4multiplevectors, 40
- *Topic **box whisker diagram**
 - MDplot, 37
- *Topic **categoricalVariable**
 - categoricalVariable, 8
- *Topic **categorical**
 - categoricalVariable, 8
- *Topic **choropleth map**
 - Choroplethmap, 8
- *Topic **choropleth**
 - Choroplethmap, 8
- *Topic **classification world map**
 - Worldmap, 67
- *Topic **clustering**
 - DataVisualizations-package, 3
- *Topic **cross table**
 - Crosstable, 20
- *Topic **datasets**
 - categoricalVariable, 8
 - ChoroplethPostalCodesAndAGS_Germany, 11
 - FundamentalData_Q1_2018, 25
 - ITS, 35
 - Lsun3D, 35
 - MTY, 43
 - world_country_polygons, 68
- *Topic **density estimation**
 - StatPDEdensity, 64
- *Topic **density**
 - MDplot, 37
- *Topic **distance**
 - InspectDistances, 31
- *Topic **distribution analysis**
 - InspectDistances, 31
 - InspectVariable, 34
- *Topic **distribution visualization**
 - InspectVariable, 34
- *Topic **distribution**
 - InspectVariable, 34
- *Topic **estimation**
 - InspectVariable, 34

- *Topic **fan plot**
Fanplot, 24
- *Topic **fanplot**
DataVisualizations-package, 3
- *Topic **fan**
Fanplot, 24
- *Topic **geom_bar**
ABCbarplot, 6
- *Topic **geom_violin**
MDplot, 37
MDplot4multiplevectors, 40
- *Topic **ggproto density estimation**
StatPDEdensity, 64
- *Topic **heat map**
Heatmap, 28
- *Topic **heatmap**
Heatmap, 28
Pixelmatrix, 52
- *Topic **image**
Pixelmatrix, 52
- *Topic **log**
SignedLog, 60
- *Topic **multivariate**
MDplot, 37
- *Topic **pairs**
InspectScatterplots, 32
- *Topic **pairwise scatter plot**
InspectScatterplots, 32
- *Topic **pdf**
InspectVariable, 34
MDplot, 37
MDplot4multiplevectors, 40
- *Topic **pie chart**
Fanplot, 24
Piechart, 51
- *Topic **pie**
Fanplot, 24
Piechart, 51
- *Topic **pixel matrix**
Pixelmatrix, 52
- *Topic **plot table**
Crosstable, 20
- *Topic **plot3D**
Plot3D, 53
- *Topic **plot3d**
Plot3D, 53
- *Topic **plot3**
Plot3D, 53
- *Topic **plot**
InspectBoxplots, 30
- *Topic **political map**
Choroplethmap, 8
- *Topic **postal codes**
Choroplethmap, 8
- *Topic **probability density function**
InspectVariable, 34
MDplot, 37
MDplot4multiplevectors, 40
- *Topic **projection**
DataVisualizations-package, 3
- *Topic **qqplot**
InspectStandardization, 33
QQplot, 57
- *Topic **scatter density plot**
PDEscatter, 49
- *Topic **scatter plot**
InspectScatterplots, 32
PDEscatter, 49
- *Topic **scatterplot**
InspectScatterplots, 32
- *Topic **scatter**
InspectScatterplots, 32
PDEscatter, 49
- *Topic **schematic plot**
MDplot, 37
- *Topic **scree plot**
ABCbarplot, 6
- *Topic **scree**
ABCbarplot, 6
- *Topic **slog**
SignedLog, 60
- *Topic **slope chart**
DataVisualizations-package, 3
Slopechart, 63
- *Topic **slopechart**
Slopechart, 63
- *Topic **thematic map**
Choroplethmap, 8
- *Topic **vase plot**
MDplot, 37
MDplot4multiplevectors, 40
- *Topic **violin plot**
DataVisualizations-package, 3
MDplot, 37
MDplot4multiplevectors, 40
- *Topic **violin**

- DataVisualizations-package, 3
- MDplot, 37
- MDplot4multiplevectors, 40
- *Topic **visualization**
 - DataVisualizations-package, 3
- *Topic **world map**
 - Worldmap, 67
- *Topic **zip codes**
 - Choroplethmap, 8
- *Topic **zplot**
 - Plot3D, 53
- ABC_screepplot (ABCbarplot), 6
- ABCanalysis, 7
- ABCbarplot, 6
- aes(), 65
- aes_(), 65
- agostino.test, 39
- barplot, 62
- borders(), 66
- categoricalVariable, 8
- Choroplethmap, 8
- ChoroplethPostalCodesAndAGS_Germany, 11
- ClassBoxplot, 12
- ClassMDplot, 14, 40, 42
- ClassPDEplot, 16
- ClassPDEplotMaxLikeli, 17
- Classplot, 18, 23
- Crosstable, 20
- DataVisualizations (DataVisualizations-package), 3
- DataVisualizations-package, 3
- DefaultColorSequence, 21
- dip.test, 39
- DualaxisClassplot, 19, 22
- DualaxisLinechart, 23
- Fanplot, 24, 64
- fortify(), 65
- FundamentalData_Q1_2018, 25
- geom_point, 54
- ggplot(), 65
- GoogleMapsCoordinates, 27
- Heatmap, 28
- HeatmapColors, 29
- image, 21
- inPSphere2D, 30
- InspectBoxplots, 30
- InspectDistances, 31
- InspectScatterplots, 32
- InspectStandardization, 33
- InspectVariable, 34
- ITS, 35
- layer(), 65
- log, 61
- Lsun3D, 35
- MPlot, 36
- MDplot, 14, 15, 37, 42
- MDplot4multiplevectors, 40
- MTY, 43
- OptimalNoBinsV2, 44
- ParetoDensityEstimationV2, 45
- ParetoRadiusV2, 46
- PDEplot, 47
- PDEscatter, 20, 21, 49
- Piechart, 51, 64
- Pixelmatrix, 29, 52
- plot, 51
- Plot3D, 53
- plot3d, 54
- plotChoroplethMap (Choroplethmap), 8
- PlotMissingvalues, 55
- PlotPixMatrix (Pixelmatrix), 52
- PlotProductratio, 56
- PmatrixColormap, 57
- QQplot, 57
- quantile, 20
- round, 20
- seq, 20
- Sheparddiagram, 58
- ShepardPDEscatter, 59
- SignedLog, 60
- Silhouetteplot, 61
- Slopechart, 63
- stat_pde_density, 65
- StatPDEdensity, 64

table, [21](#)

title, [20](#)

world_country_polygons, [68](#)

Worldmap, [67](#)

zplot, [155](#)