Package ‘robsel’

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Robust Selection

Robust Selection algorithm for estimation of the regularization parameter for Graphical Lasso

Usage

robsel(x, alpha = 0.9, B = 200)

Arguments

- **x**: A n-by-p data matrix
- **alpha**: Prespecified confidence level. Default 0.9
- **B**: Number of bootstrap sample. Default 200

Value

lambda Estimation of the regularization parameter for Graphical Lasso. A vector of lambda will be return if more than 1 value of alpha is provided.

References


See Also

robsel.glasso for using Graphical Lasso algorithm with estimate regularization parameter lambda from Robust Selection.

Examples

```r
set.seed(17)
library(robsel)
x <- matrix(rnorm(50*20), ncol=20)

# Compute estimation of lambda at confidence level alpha
lambda <- robsel(x = x, alpha = 0.9, B = 200)
```
**robsel.glasso**  
*Fit Graphical Lasso with RobSel*

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**Description**  
Fit Graphical Lasso with estimate regularization parameter from Robust Selection

**Usage**  
robsel.glasso(x, alpha = 0.9, B = 200, ...)

**Arguments**
- **x**  
  A n-by-p data matrix
- **alpha**  
  Prespecified confidence level. Default 0.9
- **B**  
  Number of bootstrap sample. Default 200
- **...**  
  Optional arguments passed on to glasso.

**Value**
A list with components:
- **alpha**  
  A list of prespecified confidence level
- **lambda**  
  A list of estimate regularization parameter for Graphical Lasso
- **Omega**  
  A list of estimated inverse covariance matrix
- **Sigma**  
  A list of estimated covariance matrix

**Note**
Each item in each component corresponds to a prespecified level alpha.

**References**
See Also

robsel for Robust Selection algorithm, glasso for Graphical Lasso algorithm.

Examples

set.seed(17)
library(robsel)
x <- matrix(rnorm(50*20), ncol=20)

# Use Graphical Lasso with estimate regularization parameter lambda from RobSel
fit <- robsel.glasso(x = x, alpha = 0.9, B = 200)
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