Package ‘PieceExpIntensity’

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Type Package

Title Bayesian Model to Find Changepoints Based on Rates and Count Data

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Description This function fits a reversible jump Bayesian piecewise exponential model that also includes the intensity of each event considered along with the rate of events.

License GPL-2

Encoding UTF-8

LazyData true

Imports Rcpp (>= 0.12.9)

LinkingTo Rcpp, RcppArmadillo

RoxygenNote 6.0.1

NeedsCompilation yes

Repository CRAN

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PieceExpIntensity runs the PieceExpIntensity sampler and returns posterior results.

**Description**

Returns a list of posterior samples along with summaries for the most visited number of split points.

**Usage**

```
PieceExpIntensity(X, Y, B, Poi)
```

**Arguments**

- **X**: Vector containing observed event times.
- **Y**: Vector containing poisson count intensities.
- **B**: Number of iterations to run the MCMC with half burned in.
- **Poi**: Prior mean number of split points.

**Value**

A list of all posterior quantities and a summary of the most commonly visited model.

**References**


**Examples**

```
B=1000
n=100
X=rexp(n,1)
Y=X
Y[X<.5]=rpois(sum(X<.5),20)
Y[X>.5]=rpois(sum(X>.5),3)
Poi=10
PieceExpIntensity(X,Y,B,Poi)
```
Description

C++ Sampling Function used in the PieceExpIntensity function.

Usage

PieceExpIntensity2(Y, Rates, B, Poi)

Arguments

Y Vector containing observed event times.
Rates Vector containing poisson count intensities.
B Number of iterations to run the MCMC with half burned in.
Poi Prior mean number of split points,

Value

A list of all posterior quantities.

Examples

B=1000
n=100
Y=rexp(n,1)
Rates=Y
Rates[Y<.5]=rpois(sum(Y<.5),20)
Rates[Y>.5]=rpois(sum(Y>.5),3)
Poi=10
PieceExpIntensity2(Y,Rates,B,Poi)
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