

# Package ‘bnpPhaseType’

May 7, 2020

**Type** Package

**Title** What the Package Does in One 'Title Case' Line

**Version** 1.0

**Date** 2020-04-03

**Author** Your Name

**Maintainer** Leonardo Andres Jofre Flor <lnjofre@uc.cl>

**Description** One paragraph description of what the package does as one or more full sentences.

**License** GPL (>= 2)

**Depends** R (>= 2.10)

**Imports** Rcpp,  
MCMCpack,  
truncnorm,  
GB2,  
GIGrvg,  
Matrix,  
FAdist,

**LinkingTo** Rcpp

**RoxygenNote** 7.1.0

## R topics documented:

mcmcErlangMix	1
phi_posterior	3
simdata	3

<b>Index</b>	<b>4</b>
--------------	----------

---

mcmcErlangMix	<i>Markov Chain Monte Carlo phase type parameters estimation</i>
---------------	--

---

## Description

Greet a person and appropriately capitalize their name.

**Usage**

```
mcmcErlangMix(Y, a, b, aa, bb, alpha, beta, nscan, nburn, nskip)
```

**Arguments**

Y	Your name (character string; e.g. "john doe").
a	Your name (character string; e.g. "john doe").
b	Your name (character string; e.g. "john doe").
aa	Your name (character string; e.g. "john doe").
bb	Your name (character string; e.g. "john doe").
alpha	Your name (character string; e.g. "john doe").
beta	Your name (character string; e.g. "john doe").
nscan	Your name (character string; e.g. "john doe").
nburn	Your name (character string; e.g. "john doe").
nskip	Your name (character string; e.g. "john doe").

**Value**

A Markov Chain Monte Carlo

**Examples**

```
library(GeneralizedHyperbolic)
library(bnpPhaseType)

data("simdata")
y = simdata$X
hist(y, breaks = 50)
# Libraries
fys = mcmcErlangMix( Y=y, a=0.1, b=0.1, aa=2, bb=0.1, alpha=1, beta=1, nscan=10000, nburn=2000, nskip=8 )
# Grid
tau.grid = seq( 0, 1.2*max(y), 0.1 )
# True density
p1=0.7
p2=0.3
fyr=p1*dgig(tau.grid, chi = 1, psi = 2, lambda = 12.0)+p2*dgig(tau.grid, chi = 1, psi = 2, lambda = 30.0)
p2.5=function(x){quantile(x, probs=0.025)}
p97.5=function(x){quantile(x, probs=0.975)}
meanfy=apply(fys, 2, mean)
linffy=apply(fys, 2, p2.5)
lsupfy=apply(fys, 2, p97.5)
plot(tau.grid, meanfy, type="l", ylim=c(0,1.2*max(fyr)), xlab="y", ylab="fy")
polygon(x=c(tau.grid,rev(tau.grid)), y=c(linffy,rev(lsupfy)), lty=1, density=-1, col="grey", border="grey")
polygon(x=c(tau.grid,rev(tau.grid)), y=c(linffy,rev(lsupfy)), lty=1, density=-1, col="grey", border="grey")
lines(tau.grid, meanfy, lty=2)
lines(tau.grid, fyr, lty=1)
```

---

phi_posterior	posterior distribution
---------------	------------------------

---

**Description**

Greet a person and appropriately capitalize their name.

**Usage**

```
phi_posterior(y, lambda, aa, bb, R_ante)
```

**Arguments**

y	Your name (character string; e.g. "john doe").
lambda	Your name (character string; e.g. "john doe").
aa	Your name (character string; e.g. "john doe").
bb	Your name (character string; e.g. "john doe").
R_ante	Your name (character string; e.g. "john doe").

**Details**

Function to take a random draw from the  $p(\phi_j | \dots)$

---

simdata	Scores of Group A and Group B
---------	-------------------------------

---

**Description**

A data set with the scores of two groups.

**Usage**

```
simdata
```

**Format**

A data frame with 60 rows and 2 variables:

**X** simulated values

**Source**

<<https://www.github.com/mvuorre/exampleRPackage>>

# Index

\*Topic **datasets**

simdata, [3](#)

mcmcErlangMix, [1](#)

phi\_posterior, [3](#)

simdata, [3](#)