Package ‘poibin’

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Type  Package
Title  The Poisson Binomial Distribution
Version  1.3
Date  2018-05-16
Author  Yili Hong
Maintainer  Yili Hong <yilihong@vt.edu>
Description  Implementation of both the exact and approximation methods for computing the cdf of the Poisson binomial distribution. It also provides the pmf, quantile function, and random number generation for the Poisson binomial distribution.
License  GPL-2
LazyLoad  yes
NeedsCompilation  yes
Repository  CRAN
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poibin-package  The Poisson Binomial Distribution

Description

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Details
poibin

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- ppoibin The Poisson Binomial Distribution.

Author(s)

Yili Hong
Maintainer: Yili Hong <yilihong@vt.edu>

References


Examples

```
kk=0:10
pp=c(1,.2,.3,.4,.5)
ppoibin(kk=kk, pp=pp, method = "DFT-CF", wts=rep(2,5))
ppoibin(kk=kk, pp=pp, method = "RF", wts=rep(2,5))
ppoibin(kk=kk, pp=pp, method = "RNA", wts=rep(2,5))
ppoibin(kk=kk, pp=pp, method = "NA", wts=rep(2,5))
dpoibin(kk=kk, pp=pp, wts=rep(2,5))
rpoibin(qq=0:10/10, pp=pp, wts=rep(2,5))
rpoibin(m=2, pp=pp, wts=rep(2,5))
```

Description

The cdf, pmf, quantile function, and random number generation for the Poisson binomial distribution.
Usage

ppoibin(kk, pp, method = "DFT-CF", wts=NULL)
dpoibin(kk, pp, wts=NULL)
qpoibin(qq, pp, wts=NULL)
rpoibin(m, pp, wts=NULL)

Arguments

kk The values where the cdf or pmf to be evaluated.
pp The vector for \( p_j \)'s which are the success probabilities for indicators.
method "DFT-CF" for the DFT-CF method, "RF" for the recursive formula, "RNA" for the refined normal approximation, "NA" for the normal approximation.
wts The weights for \( p_j \)'s.
qq The values where the quantile function to be evaluated.
m The number of random numbers to be generated.

Details

See the reference for computational details.

Value

Returns the entire cdf, pmf, quantiles, and random numbers.

Author(s)

Yili Hong

References


Examples

kk=0:10
pp=c(0.1,0.2,0.3,0.4,0.5)
ppoibin(kk=kk, pp=pp, method = "DFT-CF", wts=rep(2,5))
ppoibin(kk=kk, pp=pp, method = "RF", wts=rep(2,5))
ppoibin(kk=kk, pp=pp, method = "RNA", wts=rep(2,5))
ppoibin(kk=kk, pp=pp, method = "NA", wts=rep(2,5))
dpoibin(kk=kk, pp=pp, wts=rep(2,5))
qpoibin(qq=0:10/10, pp=pp, wts=rep(2,5))
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