Package ‘poibin’
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Type Package
Title The Poisson Binomial Distribution
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Author Yili Hong
Maintainer Yili Hong <yilihong@vt.edu>
Description This package implements 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.
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poibin-package The Poisson Binomial Distribution.

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

Details
This package implements 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.

Author(s)

Yili Hong

Maintainer: Yili Hong <yilihong@vt.edu>

References


Examples

```r
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))
qpoibin(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

```r
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**

```r
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))
qpoibin(qq=0:10/10, pp=pp, wts=rep(2,5))
rpoibin(m=2, pp=pp, wts=rep(2,5))
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