Package: BlythStillCasellaCI (via r-universe)

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Title Blyth-Still-Casella Exact Binomial Confidence Intervals

Version 1.1.0

Description Computes Blyth-Still-Casella exact binomial confidence intervals based on a refining procedure proposed by George Casella (1986) <doi:10.2307/3314658>.

License GPL-3

Encoding UTF-8

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NeedsCompilation no

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`blyth.still.casella` *Blyth-Still-Casella Exact Binomial Confidence Intervals*

Description

`blyth.still.casella()` computes Blyth-Still-Casella exact binomial confidence intervals based on a refining procedure proposed by George Casella (1986).

Usage

```
blyth.still.casella(
  n,
  X = NULL,
  alpha = 0.05,
  digits = 2,
  CIs.init = NULL,
  additional.info = FALSE
)
```

Arguments

`n`	number of trials
`X`	number of successes (optional)
`alpha`	confidence level = 1 - alpha
`digits`	number of significant digits after the decimal point
`CIs.init`	initial confidence intervals from which the refinement procedure begins (default starts from Clopper-Pearson confidence intervals)
`additional.info`	additional information about the types of interval endpoints and their possible range is provided if TRUE (default = FALSE)

Value

If `X` is specified, the corresponding confidence interval will be returned, otherwise a list of `n + 1` confidence intervals will be returned.

If `additional.info = FALSE`, only a list of confidence interval(s) will be returned. For any coincidental endpoint, midpoint of its range will be displayed.

If `additional.info = TRUE`, the following lists will be returned:

`ConfidenceInterval`	a list of confidence intervals
`CoincidenceEndpoint`	indices of coincidental lower endpoints (L.Index) and their corresponding upper endpoints (U.index
`Range`	range for each endpoint

Examples

```
# to obtain 95% CIs for n = 30 and X = 0 to 30
blyth.still.casella(n = 30, alpha = 0.05, digits = 4)

# to obtain 90% CIs, endpoint types, indices of coincidental endpoints (if any),
# and range of each endpoint for n = 30 and X = 23
blyth.still.casella(n = 30, X = 23, alpha = 0.05, digits = 4, additional.info = TRUE)

# use initial confidence intervals defined by the user instead of Clopper-Pearson CIs
# CIs.input needs to be a (n + 1) x 2 matrix with sufficient coverage
CIs.input <- matrix(c(0,1), nrow = 11, ncol = 2, byrow = TRUE) # start with [0,1] intervals
blyth.still.casella(n = 10, alpha = 0.05, digits = 4, CIs.init = CIs.input, additional.info = TRUE)
```

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