Package: fuzzyFDR (via r-universe)

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Type Package

Title Exact Calculation of Fuzzy Decision Rules for Multiple Testing

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Description Exact calculation of fuzzy decision rules for multiple testing. Choose to control FDR (false discovery rate) using the Benjamini and Hochberg method, or FWER (family wise error rate) using the Bonferroni method. Kulinsakaya and Lewin (2007). Compatibility updates by Renova.

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`fuzzyFDR-package` *Exact calculation of fuzzy decision rules for multiple testing*

Description

Exact calculation of fuzzy decision rules for multiple testing. Choose to control FDR (false discovery rate) using the Benjamini and Hochberg method, or FWER (family wise error rate) using the Bonferroni method. Kulinsakaya and Lewin (2007).

Details

Package:	fuzzyFDR
Type:	Package
Version:	1.0
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The main function is `fuzzyBHexact`, which calculates exact fuzzy decision rules for multiple testing with discrete p-values, controlling the false discovery rate using the Benjamini and Hochberg method.

Author(s)

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References

Kulinsakaya and Lewin (2007).

Examples

```
data(example1)
names(example1)
fuzzyBHexact(example1$pvals,example1$pprev,alpha=0.05)
data(example2)
names(example2)
fuzzyBHexact(example2$pvals,example2$pprev,alpha=0.05)
```

example1 *Examples 1 and 3 of Kulinskaya and Lewin*

Description

Observed and previously attainable p-values used in Examples 1 and 3 of Kulinskaya and Lewin.

Usage

```
data(example1)
```

Format

A data frame with 7 observations on the following 2 variables.

`pvals` a numeric vector

`pprev` a numeric vector

Source

Kulinskaya and Lewin (2007).

Examples

```
data(example1)
fuzzyBHexact(example1$pvals,example1$pprev,alpha=0.05)
```

example2 *Example 2 of Kulinskaya and Lewin*

Description

Observed and previously attainable p-values used in Example 2 of Kulinskaya and Lewin.

Usage

```
data(example2)
```

Format

A data frame with 10 observations on the following 2 variables.

`pvals` a numeric vector

`pprev` a numeric vector

Source

Kulinskaya and Lewin (2007).

Examples

```
data(example2)
fuzzyBHexact(example2$pvals,example2$pprev,alpha=0.05)
```

`fuzzyBHexact` *Exact calculation of fuzzy decision rules (Benjamini and Hochberg FDR)*

Description

Exact calculation of fuzzy decision rules for multiple testing. Controls the FDR (false discovery rate) using the Benjamini and Hochberg method.

Usage

```
fuzzyBHexact(pvals, pprev, alpha = 0.05, tol = 1e-05, q.myuni = T, dp = 20)
```

Arguments

`pvals`	observed discrete p-values
`pprev`	previously attainable p-values under the null distribution
`alpha`	significance level of the FDR procedure
`tol`	tolerance for my.match and my.unique
`q.myuni`	logical. Use my.match instead of match?
`dp`	no. decimal places to round p-values to

Details

my.match and my.unique may be used instead of match and unique if there is a problem with calculating the unique set of p-values (sometimes a problem with very small p-values)

Value

Data frame containing the p-values and previously attainable p-values input to the function, and the tau (fuzzy decision rule) output. Also contains the minimum and maximum ranks over allocations for each p-value.

Author(s)

Alex Lewin

References

Kulinsakaya and Lewin (2007).

Examples

```
data(example1)
names(example1)
fuzzyBHexact(example1$pvals,example1$pprev,alpha=0.05)
data(example2)
names(example2)
fuzzyBHexact(example2$pvals,example2$pprev,alpha=0.05)
```

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