Description

A DESCRIPTION OF THE PACKAGE

References

Detecting differential gene expression with a semiparametric hierarchical mixture method Michael A. Newton, Amine Noueiry, Deepayan Sarkar, Paul Ahlquist https://doi.org/10.1093/biostatistics/5.2.155

efdr

EFDR and EFNR estimation

Usage

efdr(evidence_threshold, probs)

efnr(evidence_threshold, probs)

Arguments

evidence_threshold
  Scalar value specifying the evidence threshold at which the EFDR or EFNR should be evaluated.

probs
  Vector of probabilities.
Description

Given a vector of probabilities, this function finds the probability threshold that matches a target expected false discovery rate as closely as possible.

Usage

```r
efdr_search(
  probs,
  target_efdr,
  min_threshold = 0.7,
  prob_thresholds = seq(0.5, 0.9995, by = 0.00025)
)
```

Arguments

- `probs`: Vector of probabilities.
- `target_efdr`: Numeric scalar specifying the expected false discovery rate to match.
- `min_threshold`: Minimum probability threshold. If the optimal probability threshold is below this number, it is rejected and `min_threshold` is used instead.
- `prob_thresholds`: Vector for probability thresholds to scan, with the aim of finding the threshold that matches the target EFDR.

Value

An object of class "bayefdr" containing the probability thresholds tested, the EFDR and EFNR at each probability threshold, and the optimal threshold.

Examples

```r
probs <- runif(100)
efdr <- efdr_search(probs, target_efdr = 0.1)
plot(efdr)
```
### optimal

Retrieves the index of the optimal probability threshold.

**Description**

Retrieve the index of the optimal probability threshold.

**Usage**

```r
optimal(x)
```

**Arguments**

- `x`: An object of class "bayefdr".

**Value**

The integer index of the optimal probability threshold.

**Examples**

```r
probs <- runif(100)
e <- efdr_search(probs, target_efdr = 0.1)
optimal(e)
e[optimal(e), ]
```

### plot.bayefdr

Plot the EFDR, EFNR grids of a bayefdr object.

**Description**

Plot the EFDR, EFNR grids of a bayefdr object.

**Usage**

```r
# S3 method for class 'bayefdr'
plot(x, ...)
```

**Arguments**

- `x`: An object of class bayefdr.
- `...`: Unused.

**Value**

A ggplot.
print.bayefdr

Print methods for bayefdr objects.

Description

Print methods for bayefdr objects.

Usage

```r
## S3 method for class 'bayefdr'
print(x, ...)

## S3 method for class 'bayefdr'
head(x, ...)
```

Arguments

- `x` An object of class bayefdr.
- `...` Unused.
Index

bayefdr (bayefdr-package), 2
bayefdr-package, 2

efdr, 2
efdr_search, 3
efnr (efdr), 2

head.bayefdr (print.bayefdr), 5

optimal, 4

plot.bayefdr, 4
print.bayefdr, 5