

Package ‘LBE’

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Type Package

Title Estimation of the false discovery rate

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LBE-package	<i>Estimation of the proportion of true null hypotheses, the false discovery rate and the q-values.</i>
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Description

The package LBE allows estimating the proportion of true null hypotheses and the false discovery rate.

Details

Package:	LBE
Type:	Package
Version:	1.13.2
Date:	

Usage

```
data(golub.pval)
```

Format

The format is: num [1:3051] 0.0170 0.2552 0.9130 0.7867 0.2431 ...

References

Golub TR, Slonim DK, Tam

LBE	<i>Estimation of the false discovery rate.</i>
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Description

LBE is an efficient procedure for estimating the proportion of true null hypotheses, the false discovery rate and the q-values.

Usage

```
LBE(pval,
```

FDR	Level at which to control the FDR (if n.significant == NA) or estimated FDR (if n.significant != NA).
pi0	Estimated value of pi0, the proportion of true null hypotheses.
pi0.ci	Confidence interval for pi0.
ci.level	Level for the confidence interval of pi0.
a	Value used in $[-\ln(1 - pi)]^a$ (see details).
l	Upper bound of the asymptotic standard deviation for pi0.
qvalues	Vector of the estimated q-values.
pvalues	Vector of the original p-values.
significant	Indicator of whether the null hypothesis is rejected.

LBEa

*Optimal setting for the parameter a***Description**

The LBEa function is called by the main function LBE for choosing the greatest value of a such that the upper bound of the asymptotic standard deviation is less than a threshold l. A plot illustrating the relation between a and l for a fixed number of tested hypotheses can also be displayed.

Usage

See Also

[LBE](#), [LBEplot](#), [LBESummary](#), [LBEwrite](#)

Examples

```
## start
data(hedenfalk.pval)
m <- length(hedenfalk.pval)
LBEa(m, l = 0.05)
## end
```

LBEplot

Examples

```
## start
data(hedenfalk.pval)
res=LBE(hedenfalk.pval,plot.type="none")
LBEplot(res)
LBEplot(res,plot.type="main")
LBEplot(res,plot.type="main",legend=FALSE)
## end
```

LBESummary

*Display LBE object***Description**

Display summary

Examples

```
## start
data(hedenfalk.pval)
res<-LBE(hedenfalk.pval)
print(res)
LBEsummary(res)
## end
```

LBEwrite*Write the results of an LBE object to a file.*

Description

Write the results of an LBE object to a file.

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