Package 'HGSL'

October 12, 2022

Title Heterogeneous Group Square-Root Lasso

Version 1.0.0

Description Estimation of high-dimensional multi-response regression with heterogeneous noises under Heterogeneous group square-root Lasso penalty. For details see: Ren, Z., Kang, Y., Fan, Y. and Lv, J. (2018)<arXiv:1606.03803>.

Depends R (>= 3.5.0)

License GPL (>= 2)

Encoding UTF-8

LazyData true

RoxygenNote 6.1.0

NeedsCompilation no

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Repository CRAN

Date/Publication 2018-08-31 08:30:10 UTC

R topics documented:

S_TISP_Path *S_TISP_Path Function*

Description

This function allows you to obtain Estimation of high-dimensional multi-response regression with heterogeneous noises under eterogeneous group square-root Lasso penalty.

Usage

```
S_TISP_Path(X, y, grps, k, index, lambdas)
```

Arguments

X	A block diagonal design matrix.For each block, each row represents an observation. All blocks share the same number of columns.
y	response vector whose length equals to the sum of number of observations across all groups.
grps	a vector to indicate which group each entry of beta belongs
k	number of groups
index	a vector indicates the starting point and ending point for each group. For example, if there is 100 samples in the first group and 150 samples in the second group, then it is c(1,100,101,250)
lambdas	a vector of tuning parameters of group lasso penalty

Examples

```
p <- 10
n <- 20
k <- 2
X <- matrix(0, n*k, p*k)
X[1:n, 1:p] <- rnorm(n*p)
X[(n+1):(k*n), (p+1):(p*k)] <- rnorm(n*p)
beta <- c(0:9, (0:9)/2)
y <- X %*% beta + rnorm(n*k)*0.1
grps <- rep(1:p, k)
lambdas <- (1:5)/2
index <- c(1, n, n+1, 2*n)
betaest <- S_TISP_Path(X, y, grps, k, index, lambdas)
```

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