procrustes {MCMCpack} R Documentation

Procrustes Transformation

Description

This function performs a Procrustes transformation on a matrix `X` to minimize the squared distance between `X` and another matrix `Xstar`.

Usage

```
procrustes(X, Xstar, translation = FALSE, dilation = FALSE)
```

Arguments

`X`	The matrix to be transformed.
`Xstar`	The target matrix.
`translation`	logical value indicating whether `X` should be translated.
`dilation`	logical value indicating whether `X` should be dilated.

Details

`R`, `tt`, and `s` are chosen so that:

$$s\ X\ R\ +\ 1\ tt'\ \backslash approx\ X\hat{}*$$

`X.new` is given by:

$$X\_\{new\}\ =\ s\ X\ R\ +\ 1\ tt'$$

Value

A list containing: `X.new` the matrix that is the Procrustes transformed version of `X`, `R` the rotation matrix, `tt` the translation vector, and `s` the scale factor.

References

Borg and Groenen. 1997. *Modern Multidimensional Scaling*. New York: Springer. pp. 340-342.

See Also

`MCMCirtKd`
