Package 'psacomp'

Title Principal Subsimplex Analysis for Compositional Data

Version 0.0.0.9000

Description "psacomp" is a package for computing Principal Subsimplex Analysis introduced in Principal Subsimplex Analysis (2025+), Hyeon Lee, Kassel Liam Hingee, Janice L. Scealy, Andrew T. A. Wood, Eric Grunsky, and J. S. Marron.

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Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

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psa   *Principal Subsimplex Analysis*

Description

Estimate PSA-S or PSA-O of given data matrix.

Usage

```
psa(type, X, testweights = seq(0, 1, length.out = 100))
```

Arguments

type	's' for PSA-S or 'o' for PSA-O.
X	a data matrix.
testweights	a vector of weights for grid search for alpha.

Value

A list of the following components of PSA.

Vhat	a list of matrix representing vertices of the lower dimensional subsimplex.
Xhat	a list of lower dimensional representations with respect to the original basis.
Xhat_reduced	a list of lower dimensional representations with respect to the reduced basis Vhat
scores	a matrix of scores.
X	the input matrix.
residuals	a list of residuals.
scores	a matrix of scores.
RSS	a vector of residual sums of squares.
backwards_mean	the backwards mean. Equal to Vhat$'r=0'.
loadings	a matrix of loading vectors.
construction_info	
	a data frame of merged vertices and merging weight at each merge.

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