Package 'nonparametricSummaryPSM'

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Type Package

Title Nonparametric methods to find optimal weights to combine posterior similarity matrices

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Author Magdalena Strauss

Maintainer Magdalena Strauss <ms58@sanger.ac.uk>

Description The purpose of this code is to compute summary PSMs (posterior similarity matrices) from a set of multiple PSMs obtained for instance by means of subsampling. This implements the Dirichlet process and Pitman-Yor process based methods for combining PSMs proposed in Strauss et al. (2019). GPseudoClust: deconvolution of shared pseudo-trajectories at single-cell resolution.

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Encoding UTF-8

LazyData true

RoxygenNote 6.1.1

R topics documented:

`computeSumClustPEAR` *computeSumClustPear*

Description

Internal function

Usage

```
computeSumClustPEAR(PSM, maxCl = 10)
```

Arguments

PSM	posterior similarity matrix

Value

Summary clustering computed using the PEAR criterion (Fritsch and Ickstadt, 2009, using the mcclust package (Fritsch, 2012))

Author(s)

Magdalena Strauss

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computeWeightsSumClust

computeWeightsSumClust

Description

Internal function

Usage

```
computeWeightsSumClust(allocs)
```

Value

PSM and summary clustering obtained from Pitman-Yor process with allocs as input, weights used to compute the summary PSM from the individual PSMs

Author(s)

Magdalena Strauss

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computeWeightsSumClustDPM

computeWeightsSumClustDPM

Description

Internal function

Usage

```
computeWeightsSumClustDPM(allocs)
```

Value

PSM and summary clustering obtained from Dirichlet process with allocs as input, weights used to compute the summary PSM from the individual PSMs

Author(s)

Magdalena Strauss

`processPSMs` *processPSMs*

Description

processPSMs

Usage

```
processPSMs(PSMs)
```

Arguments

`PSMs`	3-dimensional array of PSMs, for each j PSMs[,,j] is the PSM of subsampled chain j

Value

weightedPSM: weighted summary PSM obtained using a Pitman-Yor process mixture model with variable selection

sumClustPEAR: final summary clustering obtained from weightedPSM using the PEAR criterion

weightedPSM_DP weighted summary PSM obtained using a Dirichlet process mixture model with variable selection

sumClustPEAR_DP: final summary clustering obtained from weightedPSM_DP using the PEAR criterion

weights: weights which were used for the computation of the summary PSM (Pitman-Yor based model)

weights_DP: weights which were used for the computation of the summary PSM (Dirichlet based model)

Author(s)

Magdalena Strauss

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