Package: fmx (via r-universe)

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Type Package

Title Finite Mixture Parametrization

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Description A parametrization framework for finite mixture distribution using S4 objects. Density, cumulative density, quantile and simulation functions are defined. Currently normal, Tukey g-&-h, skew-normal and skew-t distributions are well tested. The gamma, negative binomial distributions are being tested.

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Depends R (>= 4.6.0)

Imports methods, goftest, LaplacesDemon, rstpm2, sn, param2moment, TukeyGH77 (>= 0.2.0)

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`fmx-package` *Finite Mixture Parametrization*

Description

A parametrization framework for finite mixture distribution using S4 objects.

Density, cumulative density, quantile and simulation functions are defined.

Currently normal, Tukey g-&-h, skew-normal and skew-t distributions are well tested. The gamma, negative binomial distributions are being tested.

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`as.fmx` *Turn Various Objects to fmx Class*

Description

Turn various objects created in other R packages to fmx class.

Usage

```
as.fmx(x, ...)
```

Arguments

`x`	an R object
`...`	additional parameters, see **Arguments** in individual S3 dispatches

Details

Various mixture distribution estimates obtained from other R packages are converted to fmx class, so that we could take advantage of all methods defined for fmx objects.

Value

S3 generic function [as.fmx()] returns an fmx object.

`fmx` *Create fmx Object for Finite Mixture Distribution*

Description

To create fmx object for finite mixture distribution.

Usage

```
fmx(distname, w = 1, ...)
```

Arguments

`distname`	character scalar
`w`	(optional) numeric vector. Does not need to sum up to 1; ‘w/sum(w)‘ will be used internally.
`...`	mixture distribution parameters. See function dGH for the names and default values of Tukey g-&-h distribution parameters, or dnorm for the names and default values of normal distribution parameters.

Value

The function [fmx()] returns an fmx object.

`fmx-class` *fmx Class: Finite Mixture Parametrization*

Description

An S4 object to specify the parameters and type of distribution of a one-dimensional finite mixture distribution.

Slots

`distname` character scalar, name of parametric distribution of the mixture components. Currently, normal (‘’norm’‘) and Tukey g-&-h (‘’GH’‘) distributions are supported.

`pars` double matrix, all distribution parameters in the mixture. Each row corresponds to one component. Each column includes the same parameters of all components. The order of rows corresponds to the (non-strictly) increasing order of the component location parameters. The columns match the formal arguments of the corresponding distribution, e.g., ‘’mean’‘ and ‘’sd’‘ for Normal mixture, or ‘’A’‘, ‘’B’‘, ‘’g’‘ and ‘’h’‘ for Tukey g-&-h mixture.

`w` numeric vector of mixing proportions that must sum to 1

`data` (optional) numeric vector, the one-dimensional observations

`data.name` (optional) character scalar, a human-friendly name of the observations

`vcov_internal` (optional) variance-covariance matrix of the internal (i.e., unconstrained) estimates

`vcov` (optional) variance-covariance matrix of the mixture distribution (i.e., constrained) estimates

`dist.ks` (optional) double scalar, Kolmogorov-Smirnov distance, via ks.test

`dist.cvm` (optional) double scalars, Cramer von Mises distance, via cvm.test

`dist.kl` (optional) double scalars, Kullback-Leibler distance

`logd` (optional) double vector, point-wise log-density

`logLik` (optional) logLik object, log-likelihood

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