# Package 'mmfit'

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**Title** mmfit

**Description** This package includes tools for fitting distributions to data with method of moment

**Version** 1.0

**License** GPL(>=2)

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**Imports** ggplot2, gmm, grid

## R topics documented:



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`mmfit` *method of moment fitting function*

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### Description

fit data with method of moment

### Usage

```
mmfit(g, x, gd, start)
```

### Arguments

| | |
|---|---|
| `g` | Name of the distribution. Built in option includes: "poisson", "power law","bivariate normal", "gamma", "beta", "negative binomial","mixture of 2 poissons", "mixture of 2 exponentials","mixture of 2 normals" |
| `x` | A vector of data or matrix/data frame |
| `start` | Starting values of the estimating parameters |
| `gd` | If user supplies g, he needs to supplies the pmf/pdf as gd. i.e. gd = function(x, list(th1, th2, ...)). Default to NULL |

## Value

mmf object which includes the estimations and standard errors of the parameters, a graph object that compares the parametric and nonparametric density estimates, a graph object that draws the empirical cdf and an enclosing Kolmogorov-Smirnov confidence band. Note that we don't visualize for multivariate data.

## Examples

```
# We provide three examples below.
# There first two require other packages' data. We comment them out
if(FALSE){
# fit a beta distribution on a real dataset
install.packages("mfp")
library("mfp")
data("bodyfat")
x = bodyfat$brozek/100
a = mmfit(g="beta",x=x,start=c(alpha=0.2,beta=0.2))
print(a)

# fit a power law distribution on a real dataset
install.packages("poweRlaw")
library("poweRlaw")
data("moby")
x = moby
b = mmfit(g="power law",x=x,start=c(gamma = 20))
print(b)

# fit a bivariate normal on a simulation dataset(data.frame)
install.packages("mvtnorm")
library(mvtnorm)
sigma <- matrix(c(4,2,2,3),ncol=2)
nums = rmvnorm(1000, mean=c(5,10),sigma=sigma)
c = mmfit(g="bivariate normal",x=nums,start=c(mu1=5,mu2=10,sigma11=6,sigma22=5,sigma12=4))
summary(c)
}

# fit a mixture normal distribution on a real dataset
x = faithful$waiting
d = mmfit(g="mixture of 2 normals",x=x,start=c(mu1=50,sd1=5,mu2=80,sd2=2,prop1=0.3))
print(d)
```

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