Package ‘skewt’

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Title The Skewed Student-t Distribution
Description Density, distribution function, quantile function and random generation for the skewed t distribution of Fernandez and Steel.
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The Skewed Student t Distribution

Description
Density, distribution function, quantile function and random generation for the skewed t distribution, as introduced by Fernandez and Steel, with df degrees of freedom.

Usage

dskt(x, df, gamma = 1)
pskt(x, df, gamma = 1)
qskt(p, df, gamma)
rskt(n, df, gamma)
Arguments

- `x`: vector of quantiles.
- `p`: vector of probabilities.
- `n`: number of observations. If `length(n) > 1`, the length is taken to be the number required.
- `df`: degrees of freedom (> 0, maybe non-integer).
- `gamma`: skewing parameter, $\gamma$

Details

The Skewed $t$ distribution with $df = \nu$ degrees of freedom has the following density, where $f(x)$ is the density of the $t$ distribution, with $\nu$ degrees of freedom:

$$f(x) = \frac{2}{\gamma + \frac{1}{\gamma}} f(\gamma x) \quad \text{for} \quad x < 0$$

and

$$f(x) = \frac{2}{\gamma + \frac{1}{\gamma}} f\left(\frac{x}{\gamma}\right) \quad \text{for} \quad x \geq 0$$

Value

dskt gives the density, pskt gives the distribution function, qskt gives the quantile function, and rskt generates random deviates.

References


See Also

df for the F distribution.

Examples

dskt(0.5,2)
dskt(0.01,2,2)
pskt(1.25,2,2)
pskt(c(0.5,1.25),3)
qskt(c(0,0.025,0.25,0.5,0.75,0.975,1),2,2)
rskt(100,2,2)
plot(function(x)dskt(x,2,2),-3,3,n=301)
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