

Package: JAGSmodule (via r-universe)

October 17, 2026

Title Minimal Example of a JAGS Module

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Description This R package shows how to configure a JAGS extension module for compatibility with the new (as of October 2026) facilities within rjags.

URL <https://github.com/mdenwood/JAGSmodule>

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Encoding UTF-8

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SystemRequirements JAGS >= 4.3.2 (<https://mcmc-jags.sourceforge.io/>)

Imports rjags (>= 4-18)

Language en-GB

Config/roxygen2/version 8.1.0

Config/pak/sysreqs jags

Repository <https://ku-awdc.r-universe.dev>

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load_JAGSmodule

Load the internal JAGS module provided by this package

Description

The runjags package contains a JAGS extension module that provides several additional distributions for use within JAGS (see details below). For now, this is duplicated within the JAGSmodule package for testing and demonstration purposes.

Usage

```
load_JAGSmodule()
```

```
unload_JAGSmodule()
```

Details

This module provides the following distributions for JAGS:

PARETO TYPE I: dpar1(alpha, sigma)

$$p(x) = \alpha \sigma^\alpha x^{-(\alpha+1)}$$

$$\alpha > 0, \sigma > 0, x > \sigma$$

PARETO TYPE II: dpar2(alpha, sigma, mu)

$$p(x) = \frac{\alpha}{\sigma} \left(\frac{\alpha + x - \mu}{\sigma} \right)^{-(\alpha+1)}$$

$$\alpha > 0, \sigma > 0, x > \mu$$

PARETO TYPE III: dpar3(sigma, mu, gamma)

$$p(x) = \frac{\frac{x-\mu}{\sigma}^{\frac{1}{\gamma}-1} \left(\frac{x-\mu}{\sigma}^{\frac{1}{\gamma}} + 1 \right)^{-2}}{\gamma \sigma}$$

$$\sigma > 0, \gamma > 0, x > \mu$$

PARETO TYPE IV: dpar4(alpha, sigma, mu, gamma)

$$p(x) = \frac{\alpha \frac{x-\mu}{\sigma}^{\frac{1}{\gamma}-1} \left(\frac{x-\mu}{\sigma}^{\frac{1}{\gamma}} + 1 \right)^{-(\alpha+1)}}{\gamma \sigma}$$

$$\alpha > 0, \sigma > 0, \gamma > 0, x > \mu$$

LOMAX: dlomax(alpha, sigma)

$$p(x) = \frac{\alpha}{\sigma} \left(1 + \frac{x}{\sigma}\right)^{-(\alpha+1)}$$

$$\alpha > 0, \sigma > 0, x > 0$$

GENERALISED PARETO: dgenpar(sigma, mu, xi)

$$p(x) = \frac{1}{\sigma} \left(1 + \xi \left(\frac{x - \mu}{\sigma}\right)\right)^{-\left(\frac{1}{\xi} + 1\right)}$$

For $\xi = 0$:

$$p(x) = \frac{1}{\sigma} e^{\frac{-(x-\mu)}{\sigma}}$$

$$\sigma > 0, x > \mu$$

DUMOUCHEL: dmouch(sigma)

$$p(x) = \frac{\sigma}{(x + \sigma)^2}$$

$$\sigma > 0, x > 0$$

HALF CAUCHY: dhalfcauchy(sigma)

$$p(x) = \frac{2\sigma}{\pi (x^2 + \sigma^2)}$$

$$\sigma > 0, x > 0$$

For an easier to read version of these PDF equations, see the [userguide vignette](#).

References

Denwood, M.J. 2016. runjags: An R Package Providing Interface Utilities, Model Templates, Parallel Computing Methods and Additional Distributions for MCMC Models in JAGS. J. Stat. Softw. 71. doi:10.18637/jss.v071.i09.

See Also

[load.pkg.module](#)

Examples

```
library("rjags")
# The JAGS module is loaded when the package is attached:
list.modules()
# But can be unloaded:
unload_JAGSmodule()
list.modules()
# And re-loaded:
load_JAGSmodule()
list.modules()

# A simple model using the package module:
m <- "model{ L ~ dlomax(1,1) }"
jags.model(textConnection(m))
```

test_JAGSmodule	<i>Load the internal JAGS module provided by runjags</i>
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Description

Some basic facilities to test the distributions provided by the package module. TODO: remove and replace with d/p/q/rlomax etc

Usage

```
test_JAGSmodule(
  distribution,
  funtype,
  parameters,
  x,
  uselog = FALSE,
  lower = TRUE
)
```

Arguments

distribution	One of lomax, mouch, genpar of halfcauchy
funtype	One of d, p or q
parameters	a vector of parameters
x	the x (for funtype="d"), q (for funtype="p"), or p (for funtype="q") value to use in the distribution
uselog	should the probability be returned (or given) on the log axis?
lower	ignored for funtype="d"

References

Denwood, M.J. 2016. runjags: An R Package Providing Interface Utilities, Model Templates, Parallel Computing Methods and Additional Distributions for MCMC Models in JAGS. J. Stat. Softw. 71. doi:10.18637/jss.v071.i09.

See Also

[load_JAGSmodule](#)

Examples

```
test_JAGSmodule("lomax", "d", c(1,1), 1)
test_JAGSmodule("mouch", "p", c(1), 1)
```

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* **methods**

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