Table 1: Distributions provided by the JAGS module included with **runjags**

Name	Usage	Density	Lower
Pareto I [1]	`dpar1(alpha,sigma)` $\alpha > 0, \sigma > 0$	$\alpha\,\sigma^{\alpha}\,x^{-(\alpha+1)}$	σ
Pareto II	`dpar2(alpha,sigma,mu)` $\alpha > 0, \sigma > 0$	$\frac{\alpha}{\sigma}\left(\frac{\sigma+x-\mu}{\sigma}\right)^{-(\alpha+1)}$	μ
Pareto III	`dpar3(sigma,mu,gamma)` $\sigma > 0, \gamma > 0$	$\frac{\left(\frac{x-\mu}{\sigma}\right)^{\frac{1}{\gamma}-1}\left(\frac{x-\mu}{\sigma}^{\frac{1}{\gamma}}+1\right)^{-2}}{\gamma\,\sigma}$	μ
Pareto IV	`dpar4(alpha,sigma,mu,gamma)` $\alpha > 0, \sigma > 0, \gamma > 0$	$\frac{\alpha\left(\frac{x-\mu}{\sigma}\right)^{\frac{1}{\gamma}-1}\left(\frac{x-\mu}{\sigma}^{\frac{1}{\gamma}}+1\right)^{-(\alpha+1)}}{\gamma\,\sigma}$	μ
Lomax [2]	`dlomax(alpha,sigma)` $\alpha > 0, \sigma > 0$	$\frac{\alpha}{\sigma}\left(1+\frac{x}{\sigma}\right)^{-(\alpha+1)}$	0
DuMouchel [3]	`dmouch(sigma)` $\sigma > 0$	$\frac{\sigma}{(x+\sigma)^2}$	0
Gen. Par.	`dgenpar(sigma,mu,xi)` $\sigma > 0$	$\frac{1}{\sigma}\left(1+\xi\frac{x-\mu}{\sigma}\right)^{-\left(\frac{1}{\xi}+1\right)}$	μ [4]
		For $\xi = 0$: $\frac{1}{\sigma}\,e^{\frac{-(x-\mu)}{\sigma}}$	μ

[1] This is equivalent to the `dpar(alpha,c)` distribution and provided for naming consistency

[2] This is referred to as the '2[nd] kind Pareto' distribution by Van Hauwermeiren and Vose (2009); an alternative form for the PDF of this distribution is given by: $\frac{\alpha\,\sigma^{\alpha}}{(x+\sigma)^{\alpha+1}}$

[3] This distribution was suggested by DuMouchel (1994) as a suitable prior for τ in a Bayesian meta-analysis setting, and is equivalent to a Lomax distribution with $\alpha = 1$

[4] The Generalised Pareto distribution also has an upper bound of $x \leq \mu - \frac{\sigma}{\xi}$ for $\xi < 0$