Logit-Beta prior: logitbeta

This is a prior for a probability parameter $p \in (0, 1)$ which is internally represented as

$$\theta = \log \frac{p}{1-p} = \text{logit}(p)$$

and p is Beta-distributed.

Parametrization

The logitbeta-prior is defined on θ so that the probability parameter p has a Beta(a, b) distribution with density

$$\frac{\Gamma(a+b)}{\Gamma(a)\Gamma(b)} p^{a-1}(1-p)^{b-1}$$

Specification

The prior is specified in the `hyper` argument as follows:

```
hyper = list(<theta> = list(prior = "logitbeta", param=c(<a>,<b>)))
```

Default values

doc `Logit prior for a probability`

nparameters `2`

pdf `logitbeta`

Example

Notes

The prior is internally defined on the θ parameter therefore initial values have to be provided in the θ-scale. For example if the desired initial value is $p = 0.5$, which means $\theta = \log(0.5/(1-0.5)) = 0$, and

```
hyper = list(<theta> = list(prior = "logitbeta", param=c(<a>,<b>), initial=0))
```