

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 $\text{Beta}(a, b)$ 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))
```