Beta prior for correlation parameters: betacorrelation

This is a prior for the correlation parameter $\rho \in (-1,1)$ which is internally represented as

$$\theta = \log \frac{1+\rho}{1-\rho}$$

Parametrization

The prior defined on θ so that the correlation parameter ρ has a Beta(a,b) distribution scaled to have domain in (-1,1):

$$\pi(\rho|a,b) = 0.5 \frac{\Gamma(a+b)}{\Gamma(a)\Gamma(b)} \rho^{a-1} (1-\rho)^{b-1}$$

Specification

The Beta prior for the correlation is specified in the hyper argument as follows:

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

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 $\rho = 0.5$, which means $\theta = \log(3) = 1.098$ the following specification has to be provided: