

The PC prior for the correlation ρ with $\rho = 0$ base-model

Parametrization

This prior is the PC prior for the correlation ρ with $\rho = 0$ as the base-model.. The density for ρ is

$$\pi(\rho) = \lambda \exp(-\lambda\mu(\rho)) J(\rho)$$

where

$$\mu(\rho) = \sqrt{-\log(1 - \rho^2)}$$

and

$$J(\rho) = \frac{|\rho|}{\mu(\rho)(1 - \rho^2)}.$$

The parameter λ is defined through

$$\text{Prob}(|\rho| > u) = \alpha, \quad 0 \leq u < 1, \quad 0 < \alpha < 1$$

where (u, α) are the parameters to this prior. The solution is explicite

$$\lambda = -\log(\alpha)/\mu(u).$$

Specification

This prior for the hyperparameters is specified inside the **hyper**-specification, as

```
hyper = list(<theta> = list(prior="pc.cor0", param=c(<u>,<alpha>)))
```

Example

Notes

See also functions `inla.pc.{d,p,q,r}rho0`