PC prior for precision

Parametrization

The PC prior for the log-precision x has density

$$\pi(x) = \frac{\theta}{2} \exp\left(-\theta \exp\left(-\frac{x}{2}\right) - \frac{x}{2}\right) \tag{1}$$

for $\theta > 0$ where

$$\theta = -\frac{\ln(\alpha)}{u}$$

and (u, α) are the parameters to this prior The interpretation of (u, α) is that

$$\text{Prob}(\sigma > u) = \alpha, \qquad u > 0, \quad 0 < \alpha < 1,$$

where the standard deviation is $\sigma = 1/\sqrt{\exp(x)}$.

Specification

This prior for the hyperparameters is specified inside the `hyper`-spesification, as

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

Example

Notes

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