Gaussian prior

Parametrisation

The normal/Gaussian distribution has density

$$\pi(\theta) = \left(\frac{\tau}{2\pi}\right)^{1/2} \exp\left(-\frac{\tau}{2}(\theta-\mu)^2\right) \tag{1}$$

for continuous θ where

μ**:** is the mean

τ**:** is precision.

Specification

The Gaussian prior for the hyperparameters is specified inside the `f()` function as following using the old style

```
f( <whatever> , prior="normal", param=c(<mean>, <precision>) )
```

```
f( <whatever> , prior="gaussian", param=c(<mean>, <precision>) )
```

or better, using the new style

```
f( <whatever> , hyper = list(<theta> = list(prior="gaussian", param=c(<mean>,
                                <precision>))))
```

Similar if there are more than one hyperparameter for that particular `f`-model. In the case where we want to specify the prior for the hyperparameter of an observation model, for example the negative Binomial, the the prior spesification will appear inside the `control.data()`-argument; see the following example for illustration.

Example

```
n = 10
y = rnorm(n)
r = inla(y ~ 1, data = data.frame(y),
        control.data = list(
                hyper = list(
                        prec = list(
                                prior = "normal",
                                param = c(0, 1)
                                )
                        )
                )
        )
```

Notes

None.