Constrained Linear

Parametrization

This model is like a "fixed" effect where you can constrained the coefficient of a covariate to be in an interval:

$$\eta_i = \beta x_i$$

where β is in the interval [`low`, `high`] and x are the covariates.

Hyperparameters

The β parameter, since its is constrained in general, is a hyperparamter. The internal transformation depends on the values of `low` and `high`. If `low` is `-Inf` and `high` is `Inf`, then

$$\beta = \theta$$

and the prior is put on θ. If `low` is finite and `high` is `Inf`, then

$$\beta = \text{low} + \exp(\theta)$$

and the prior is put on θ. If `low` is finite and `high` is finite, then

$$\beta = \text{low} + (\text{high} - \text{low})\frac{\exp(\theta)}{1 + \exp(\theta)}$$

and the prior is put on θ.

Specification

```
f(x, model="clinear", range = c(low, high), precision = <precision>)
```

where `precision` is the precision for the tiny noise used to implement this as a latent model.

Hyperparameter spesification and default values

doc `Constrained linear effect`

hyper

theta

hyperid `37001`
name `beta`
short.name `b`
initial `1`
fixed `FALSE`
prior `normal`
param `1 10`
to.theta `function(x, REPLACE.ME.low, REPLACE.ME.high) {`
from.theta `function(x, REPLACE.ME.low, REPLACE.ME.high) {`

constr `FALSE`

nrow.ncol `FALSE`

augmented `FALSE`

aug.factor `1`

aug.constr

n.div.by

n.required `FALSE`

set.default.values `FALSE`

pdf `clinear`

Example

```
n = 100
x = runif(n)
y = 1 + x + rnorm(n)
r = inla(y ~ f(x, model = "clinear", range = c(0, Inf)),
         data = data.frame(y,x))
summary(r)
```

Notes

None