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 hyperparameter. 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 = crecision>)
```

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

 ${\bf to.theta} \ {\tt function(x, REPLACE.ME.low, REPLACE.ME.high)} \ \{$

from.theta function(x, REPLACE.ME.low, REPLACE.ME.high) {

constr FALSE

nrow.ncol FALSE