Linkmodel: powerlogit

Parametrization

This is the link that map $p \in (0,1)$ into $x \in \Re$, where

$$F^{\beta}(x) = p, \qquad \beta > 0$$

and $F(x)$ is the cummulative distribution function for the logit,

$$F(x) = \frac{1}{1+\exp(-x)}.$$

This link is renormalized so its corresponding density have zero mean and unit variance for every value of β.

Hyperparameters

The parameter β represent the power

$$\beta = \exp(\theta_1)$$

and the prior is defined on θ_1.

The intercept is represented by a quantile level α, where

$$\alpha = \frac{\exp(\theta_2)}{1+\exp(\theta_2)}$$

and the prior is defined on θ_2.

Specification

Use `model="powerlogit"` within `control.link`.

Hyperparameter spesification and default values

doc Power logit link

hyper

theta1

hyperid 49131
name power
short.name power
initial 0.00123456789
fixed FALSE
prior normal
param 0 10
to.theta `function(x) log(x)`
from.theta `function(x) exp(x)`

theta2

hyperid 49132
name intercept
short.name intercept

initial 0
fixed FALSE
prior logitbeta
param 1 1
to.theta `function(x) log(x / (1 - x))`
from.theta `function(x) exp(x) / (1 + exp(x))`

pdf linkpowerlogit

Example

```
to be completed...
```

Notes

- This link is EXPERIMENTAL
- Setting the initial value for the hyperparameter "intercept" to infinity, will remove the intercept from the link-model.