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, and new default priors will be added in the near future

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