# Logistic

### Parametrisation

The logistic distribution is

$$f(y) = \frac{\kappa \exp(-\kappa(y-\mu))}{(1 + \exp(-\kappa(y-\mu)))^2}$$

for continuously responses y where

 $\mu$ : is the mean

 $\kappa = \tau s \pi / \sqrt{3}$ : where  $\tau$  is the precision

s: is a fixed scaling, s > 0.

#### Link-function

The mean and variance of y are given as

$$\mu$$
 and  $\sigma^2 = \frac{1}{s\tau}$ 

and the mean is linked to the linear predictor by

$$\mu = \eta$$

# Hyperparameters

The precision is represented as

$$\theta = \log \tau$$

and the prior is defined on  $\theta$ .

## **Specification**

- $\bullet$  family = logistic
- Required arguments: y and s (keyword scale)

The scalings have default value 1.

# Hyperparameter spesification and default values

# hyper

#### theta

name log precision

 $\mathbf{short.name} \;\; \mathrm{prec}$ 

initial 1

fixed FALSE

prior loggamma

**param** 1 5e-05

to.theta function(x) log(x)

from.theta function(x) exp(x)

survival FALSE

### discrete FALSE

```
link default identity
```

**pdf** logistic

# Example

### Notes

None.