Package ‘biasbetareg’

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Type Package
Title Bias correction of the parameter estimates of the beta regression model
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Description Bias correction of second order of the maximum likelihood estimators of the parameters of the beta regression model.
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bias                     Bias correction of the parameter estimates of the beta regression model

Description

Bias correction of second order of the maximum likelihood estimators of the parameters of the beta regression model.
Usage

bias(fit)

Arguments

fit  Fit beta regression models for rates and proportions via maximum likelihood using a parametrization with mean (depending through a link function on the covariates) and precision parameter (called phi).

Details

The parameters of the beta regression model are estimated by the maximum likelihood method (see Ferrari and Cribari-Neto, 2004). These estimators are generally biased in models that use link function. This bias is not a serious problem when the sample size is large, however, when the sample is small, this bias can be large compared with the standard-error estimator.

Simas et al (2010) defines formulas general for second-order biases of the beta regression model with constant or variable-precision accuracy.

Value

bias() returns a matrix with corrected coefficients.

References


See Also

betareg

Examples

require(betareg)
## Section 4 from Ferrari and Cribari-Neto (2004)
data("GasolineYield", package = "betareg")
bbt <- betareg(yield ~ batch + temp, data = GasolineYield)
bias(bbt)

## Section 3 from online supplements to Simas et al. (2010)
## mean model as in gy above
## precision model with regressor temp
bbt2 <- betareg(yield ~ batch + temp | temp, data = GasolineYield)
bias(bbt2)
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