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GENERALIZED LINEAR MODELS WITH NON-MONOTONIC LINK FUNCTION

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Abstract

In this paper, a general model is proposed to extend generalized linear models to non-monotonic link functions. In order to determine the best model, different link function families are analyzed, and through AIC, the best model is chosen. The Maximum Likelihood estimation method is used. By using the estimated Fisher Information Matrix a confidence interval for the parameters is obtained. Lastly, one example of regression extension is proposed for the Poisson distribution on a study of Salmonella Ames.

Keywords and phrases: generalized linear model, link function, AIC, Poisson distribution.