BAYESIAN ANALYSIS OF THE SIMPLE LINEAR REGRESSION WITH MEASUREMENT ERRORS

Marta Yukie BABA[1]
Fernando Antonio MOALA[1]

- *ABSTRACT: Usually the classical approach to make inference in linear regression model assumes that the independent variable does not contain measurement errors. In practice, however, the data can contain measurement errors and the presence of these errors can affect the results of the analysis drastically. Rodrigues and Baba (1994) proposed a Bayesian approach to estimate the slope parameter β in linear regression model with measurement errors considering the reliability ratio K_X as known. There are situations, however, where the information regarding the reliability ratio K_X not always is available. In this paper, our main interest is to make a Bayesian inference about β under the assumption that the reliability ratio K_X is unknown. To obtain the posterior distribution we use Gibbs Sampler algorithm.*

- *KEYWORDS: Posterior distribution; reliability ratio; slope parameter; Gibbs sampler.*

[1] UNESP, Department of Mathematics, Presidente Prudente, SP, Brazil. E-mail: *marta@fct.unesp.br / femoala@fct.unesp.br*