# Title

*Adjusting for measurement error in multilevel growth models*

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# Abstract

Measurement error is found in most of the variables used in social, behavioral and health sciences. In practice, statistical analyses tend to omit it, and ignoring the measurement error can lead to biased estimates.

Statistical methods based on the MCMC algorithm were recently proposed to adjust for measurement error in multilevel models with normally distributed predictor and response variables. The estimation of multilevel model parameters involving polynomial terms with errors-in-variables calls for a nonlinear framework.

We will present an extension of that MCMC algorithm involving a quadratic term. Value-added models applied to Portuguese data are used to illustrate the method. The survey design is longitudinal and consists of three waves - 2005/6, 2006/7 and 2007/8. Data were collected at the beginning and at the end of each academic year.