

The effect of outliers and the use of M and M-quantile estimation methods in Mixed Linear Models and heteroscedastic processes.

Valdério Anselmo Reisen^{1, 2, 3}, Ian Meneghel Danilevich^{1, 2}, Pascal Bondon² and Patrick Patrocínio^{2,3}

¹Universidade Federal de Minas Gerais, Department of Statistics, Brazil.

²Université Paris-Saclay, CNRS, CentraleSupélec, Laboratoire des signaux et systèmes, 91190, Gif-sur-Yvette, France.

³Universidade Federal do Espírito Santo, Graduate Program in Environmental Engineer, Graduate Program in Mathematics and Economics, Brazil.

March 23, 2022

Abstract

This seminar has the aim to discuss the effect of outliers and the use robust M and Quantile regression approaches in the Mixed Model and in the GARCH model. Thus, this is divided in two topics: I- Robust M-method applied in mixed models with time series covariates. An application to the relation between exposure to air pollution and forced expiratory volume in the first second (FEV1) II- M and M-quantile Regression methods in GARCH model.