

CO1 - Séries Temporais

Robust Semiparametric Nonlinear Autoregressive Models

Marcelo M. Taddeo¹; Pedro A. Morettin²

In this paper we consider a nonlinear autoregression for time series data and estimate the target function using the EM algorithm. In order to get estimators more resistant to outliers than those based on Normal errors, we also assume them to follow a scale mixture of Gaussian distributions. This class of distributions includes, among others, the Student's t distribution and symmetric stable distributions. The methodology is extended to the case of the partially linear model. To illustrate the methodology and assess its performance, we conduct a simulation study and make an application to a real series.

Palavras-chave: Scale Mixtures; Splines; EM Algorithm; Nonlinear Model; Autoregression.

¹Departamento de Estatística, Universidade Federal da Bahia – marcelo.taddeo@gmail.com

²Departamento de Estatística, Universidade de São Paulo, São Paulo – pam@ime.usp.br