STATISTICAL ANALYSIS AND DATA MINING

Short Communication

Efficient estimation in model‐based clustering of Gaussian regression time series

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First published: 05 March 2012
https://doi.org/10.1002/sam.11138

Abstract

This paper discusses an alternative approach to the estimation procedure presented in a recently published paper. The authors developed a model‐based clustering approach for regression time series and proposed the APECM procedure as an acceleration method for the expectation–maximization algorithm. The process of the estimation of model parameters was discussed in great detail. In this paper, we show how the proposed procedure can be modified to achieve substantial acceleration and better stability. In particular, numerical maximization suggested for the estimation of parameters can be replaced with analytical closed‐form expressions, and inverting high dimensional matrices can be avoided entirely. A convenient approach for assessing variability in parameter estimates is also provided. The results of conducted experiments are very promising. © 2012 Wiley Periodicals, Inc. Statistical Analysis and Data Mining, 2012