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The truncated least squares method for a class of autoregressive models. (Romanian)

Zbl 1084.62515

An. Științ. Univ. "Ovidius" Constanța, Ser. Mat. 11, No. 2, 15-24 (2003).

Summary: We determine the parameters a_j and b_j of a Kremer type autoregressive model

$$X_{ij} = a_i + (b_j + r_{ij})X_{i,j} + e_{ij}, \quad i = \overline{1, n}, \quad j = \overline{2, n},$$

using the truncated least squares method. We reduce the statistical problem to minimizing a concave function over a polytope, for which we present an iterative procedure for the determination of a local optimum. In the end, adaptation of Tuy's cutting plane method is used for the construction of the global optimum of our problem.

MSC:

62M10 Time series, auto-correlation, regression, etc. in statistics (GARCH)

65C60 Computational problems in statistics (MSC2010)

65K10 Numerical optimization and variational techniques

Keywords:

Kremer type autoregressive model; truncated least squares method

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