

[2008-1246] An auxiliary model based stochastic gradient algorithm for multivariable output error systems

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摘要

关键词

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An auxiliary model based stochastic gradient algorithm for multivariable output error systems

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Abstract

The identification problem of multivariable output error systems is considered in this paper. By constructing an auxiliary model using available input-output data and by replacing the unknown inner variables in the information vector with the outputs of the auxiliary model, an auxiliary model based stochastic gradient (AM-SG) identification algorithm is presented. Convergence analysis using the martingale convergence theorem indicates that the parameter estimates given by the AM-SG algorithm converge to their true values. In order to improve the convergence rate of the AM-SG algorithm, the AM-SG algorithm with a forgetting factor is given. The simulation results confirm the theoretical findings.

Key words [Recursive identification](#) [parameter estimation](#) [stochastic gradient](#) [auxiliary model identification idea](#) [multivariable systems](#) [convergence properties](#) [martingale convergence theorem](#)

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