

Recursive Parameter Identification Of A Class Of Nonlinear Systems From Noisy Measurements

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Summary

A model is proposed to identify the parameters of a class of stochastic nonlinear systems. The model structure is made up of two linear dynamic elements separated by a nonlinear static one. The nonlinear element is assumed to be of the polynomial type with known order; The identification is based on input/output data where the output is contaminated with measurement noise. The convergence analysis of the proposed recursive identification algorithm utilizes stochastic Lyapunov functions. Sufficient conditions for the almost sure convergence of the estimated parameters to the true ones are obtained.

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