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## RECONSTRUCTION OF EXTERNAL ACTIONS UNDER INCOMPLETE INFORMATION IN A LINEAR STOCHASTIC EQUATION

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The problem of reconstructing unknown external actions in a linear stochastic differential equation is investigated on the basis of the approach of the theory of dynamic inversion. We consider the statement when the simultaneous reconstruction of disturbances in the deterministic and stochastic terms of the equation is performed with the use of discrete information on a number of realizations of a part of coordinates of the stochastic process. The problem is reduced to an inverse problem for systems of ordinary differential equations describing the mathematical expectation and covariance matrix of the original process. A finite-step software-oriented solution algorithm based on the method of auxiliary controlled models is proposed. We derive an estimate for its convergence rate with respect to the number of measured realizations.

Keywords: dynamical reconstruction, stochastic differential equation, controlled model.

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