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ON A PROBLEM OF DYNAMIC RECONSTRUCTION UNDER INCOMPLETE INFORMATION

V. L. Rozenberg

The problem of reconstructing an unknown external influence in a system of linear ordinary differential equations is investigated on the basis of the approach of the theory of dynamic inversion. A statement is considered in which the disturbance is reconstructed synchronously with the process from incomplete discrete information on a part of coordinates of the phase trajectory. A finite-step software-oriented solution algorithm based on the method of auxiliary closed-loop models is proposed, and its error is estimated. The novelty of the paper is that we consider the inverse problem for a dynamic system in which the disturbance to be reconstructed is subject to geometric constraints and is not included in the measured component.

Keywords: system of ordinary differential equations, incomplete information, dynamic reconstruction, controlled model.

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Valeriy Lvovich Rozenberg, Cand. Sci. (Phys.-Math.), Krasovskii Institute of Mathematics and Mechanics of the Ural Branch of the Russian Academy of Sciences, Yekaterinburg, 620108 Russia; Ural Federal University, Yekaterinburg, 620002 Russia, e-mail: rozen@imm.uran.ru.

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