The problem of stability in theory and practice of formation of dynamical systems models.

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Two problems of dynamical systems models of reduced order formation saving properties of sustainability and the reduced models for unstable systems are considered. A comparative analysis of the methods to obtain reduced-order models in terms of their sustainability is carried out. Recommendations on using methods for solving the problem of modeling dynamics of guided and unguided motion of stable and unstable objects.

Keywords: *reduction, stability, linear and nonlinear dynamic systems, control system, observability and controllability.*

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