Martynyuk, A. A.; Stamova, I. M.
Stability of sets of hybrid dynamical systems with aftereffect. (English) Zbl 1435.34066

Authors’ abstract: In the first part of the paper a family of hybrid systems with aftereffect is considered.
For such equations, some results of the analysis of a set of trajectories based on matrix-valued functions
defined on the product of spaces are given. In the second part of the paper, for the first time, uncertain sets
of equations under impulsive perturbations are investigated. Estimates for the distance between extremal
sets of trajectories are derived for the systems under consideration. In addition, conditions for the global
existence of the sets of solutions regularized with respect to the parameter of uncertainty are proved.

Reviewer: Sotiris K. Ntouyas (Ioannina)

MSC:
34K09 Functional-differential inclusions
34K20 Stability theory of functional-differential equations
34K45 Functional-differential equations with impulses

Keywords:
set of hybrid equations with aftereffect; impulsive perturbations; matrix Lyapunov functions; stability

Full Text: DOI

References:


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