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OPTIMIZATION OF THE REGULATOR OF SELF-ORGANIZING SYSTEM OF COMBINED CONTROL OF A MULTI-MODE STRUCTURALLY UNDETERMINED OBJECT WITH SWITCHING

Parametric optimization of the proposed control law using a genetic algorithm and computer simulation of the control system in the Matlab-Simulink environment is carried out for a self-organizing system of decentralized combined control of a triply connected object, synthesized within the hyperstability criterion and L-dissipativity conditions, functioning under conditions of structural-parametric uncertainty and deviations. The results of parametric optimization, obtained on the basis of the generalized work criterion, are compared with the results of the control system, in which the values of the control law parameters were set for heuristic reasons.

Keywords: triply connected (three-channel) control object, de-centralized combined controller, genetic optimization algorithm, criterion of generalized work.

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