
Optimal trajectories for systems of canonical form

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The paper presents the type of program trajectories in the class of polynomials, on which the minimum value of the special energy functional is implemented. It is done for nonlinear systems with vector control. There has been created the program control corresponding to this type. When solving terminal tasks, use of polynomials is a typical technique for constructing trajectories for the systems of canonical or quasi-canonical form in the solution of the terminal problems. The presented results allow the author to determine the theoretical basis for the choice of polynomials as basic functions.

Keywords: *nonlinear dynamical system, canonical form, terminal problem, optimal control.*

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