On the solvability of the synthesis problem at optimal control of oscillatory processes described by integro-differential equations

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Abstract: In the paper synthesis problem is investigated of optimal control in the optimization of oscillation processes when equation of boundary value problem contains the Fredholm integral operator.

The investigation is conducted by methodology of professor A.I. Egorov with developed on basis of Bellman scheme. At this using the notion of a generalized solution of boundary value problem and the notion of the Frechet differential for Bellman functional. For Bellman functional is obtained integro-differential equation in partial derivatives with complicated structure. Indicated the structure of solution. An algorithm is developed for constructing the synthesizing optimal control.