

Effects of the Continuous Initial Condition and Variation of the Initial Moment in the Representation Formulas of Solution for a Perturbed Controlled Functional-Differential Equation

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The analytic representation formulas of solution are proved for the nonlinear perturbed controlled functional-differential equation. In formulas the effects of the continuous initial condition and variation of the initial moment are revealed. The representation formula of solution plays an important role in the investigation of optimization problems, allows one to get an approximate solution of the perturbed equation and to carry out a sensitivity analysis of mathematical models. For Hutchinson's control model of the population, the representation formula of solution is written and the form of the differential equation is established solution of which is the sensitivity coefficient.

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