

NUMERICAL SOLUTION OF VOLTERRA TYPE INTEGRO-DIFFERENTIAL EQUATION

Abstract

At solution of many applied problems we collide with the solution of the integro-differential equations. Among these problems we can note the population of biological objects. One of the first works devoted to the solution of the indicated problems is Volterra's work (see [1]), in which the solution of Volterra type integro-differential equation is considered in particular case. Here nonlinear Volterra type integro-differential equation is considered, in case when the integral kernel is degenerate which enables to lead the integro-differential equation to the system of ordinary differential equations. For the solution of the obtained systems of ordinary differential equations some variants of multistep methods are applied, and the sufficient conditions are obtained for their convergence.