On the numerical solution of first-order delay integro-differential equations by deficient spline collocation

F. Caliò - E. Marchetti - R. Pavani

Abstract

In a recent work we propose a collocation method by deficient spline to approximate the solution of Neutral Delay Differential Equations (NDDE) and Volterra Delay Integral Equations (VDIE). In this work we extend the method to integro-differential equations. The existence and uniqueness of the numerical solution is proved. Consistency, convergence and stability problems are studied. The algorithm supporting the numerical model is described.