World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:9, No:02, 2015

Inverse Polynomial Numerical Scheme for the Solution of Initial Value Problems in Ordinary Differential Equations

Authors : Ogunrinde Roseline Bosede

Abstract : This paper presents the development, analysis and implementation of an inverse polynomial numerical method which is well suitable for solving initial value problems in first order ordinary differential equations with applications to sample problems. We also present some basic concepts and fundamental theories which are vital to the analysis of the scheme. We analyzed the consistency, convergence, and stability properties of the scheme. Numerical experiments were carried out and the results compared with the theoretical or exact solution and the algorithm was later coded using MATLAB programming language.

Keywords : differential equations, numerical, polynomial, initial value problem, differential equation
Conference Title : ICMSCS 2015 : International Conference on Mathematical, Statistical and Computational Sciences
Conference Location : Kuala Lumpur, Malaysia
Conference Dates : February 12-13, 2015

Open Science Index, Mathematical and Computational Sciences Vol:9, No:02, 2015 publications.waset.org/abstracts/23505/pdf