Four step implicit block method of Runge-Kutta type for solving first order ordinary differential equations

ABSTRACT

In this paper, a four step implicit block method for solving first order ordinary differential equations (ODEs) is proposed. The method approximates the solutions of initial value problems at four-point mesh simultaneously using variable step size. This four step implicit method is of the multistep type but it is implemented as the Runge-Kutta type. The stability regions of the method are also studied. Numerical results are presented to show the efficiency of the proposed block method.

Keyword: Four step implicit block method; First order ordinary differential equations (ODEs); Runge-Kutta