

ORDER FIVE HYBRID BLOCK METHOD FOR THE SOLUTION OF SECOND ORDER ORDINARY DIFFERENTIAL EQUATIONS

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Abstract

We considered a one step numerical integrator of order five for the solution of second order initial value problems. We adopted method of interpolation and collocation of power series approximate solution to generate a continuous hybrid linear multistep method which was evaluated at grid points to give a continuous block method. The resultant discrete block method was recovered when the continuous block method was evaluated at selected grid points. The basic properties of the method was investigated and was found to be zero stable, consistent and convergent. The efficiency of the method was tested on some numerical example and was found to give better approximation than the existing method we compare result with.

Key Words : *One step, Interpolation, Collocation, Continuous block, Disrete block.*

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