A CLASS OF THREE STEP HYBRID SECOND DERIVATIVE BLOCK METHODs FOR THE SOLUTION OF STIFF INITIAL VALUE PROBLEMS

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Abstract

This paper proposes a class of second derivative three step hybrid block methods for solution of stiff initial value problems. The procedure of interpolation and collocation of polynomial approximate solution to generate a continuous linear multistep method which is then evaluated at some selected grid and off grid points is adopted in this paper. Three block methods are recovered from the derived continuous scheme. Consistency, zero stability and convergency are also investigated. The efficiency of the block methods is tested on some numerical examples and the results show that the method is efficient on first order stiff problems.

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