NEW HYBRID METHODS FOR THE NUMERICAL SOLUTIONS OF STIFF SYSTEMS

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Abstract

In this article, the details of new hybrid methods have been presented to solve stiff systems of ordinary differential equations (ODEs). These methods are based on one additional stage point and one/two step points used in the first derivative of the solution. Stability domains of our new methods have been obtained showing that these methods are A-stable or A-(α) stable for order p, $p = 3, 4$. Numerical results are also given for three test problems.

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