

Approach to the Construction of Variable Stepsize for a Class of General Linear

We present a new approach to the construction of variable stepsize for a class of general linear methods for the numerical solution of ordinary differential equations. These methods provide an alternative to the Nordsieck technique of changing the stepsize of integration. Order conditions are derived using a recent approach by Albrecht and examples of methods are given which are appropriate for stiff or nonstiff systems in sequential or parallel computing environments. Numerical experiments are presented which indicate that the implementation based on variable stepsize formulation is more accurate and more efficient than the implementation based on Nordsieck's technique for second-order DIMSIMs of type 1