

On the stability of diagonally implicit 2-point block backward differentiation formulae

ABSTRACT

In this work, the zero-stability properties of diagonally implicit 2-point block backward differentiation formulas (DI2BBDF) are presented. The stability region is illustrated to prove the A-stable behavior. Some numerical stiff problems are provided to test the performance of the method in terms of accuracy. Numerical results are compared with the fully implicit 2-point block backward differentiation formulas (FI2BBDF).

Keyword: Block; Diagonally implicit; Stability