

Implementation of variable step size strategy for solving neutral delay differential equation in multistep block method

ABSTRACT

The numerical solution of neutral delay differential equation (NDDE) with variable step size implementation in multistep block method is addressed in this paper. The strategy of variable step size was actually from the idea in adapting the step size control mechanism in the block method that allows each block to have different step size ratios as it moves in the interval. Special attention is paid in approximating the neutral delay term using the stored value of derivative solution in Newton divided difference interpolation. Numerical results shown that the proposed multistep block method is reliable when compared with the other existing Adams method.

Keyword: Multistep block method; Neutral delay differential equations; Variable step size