

Solving delay differential equations by Adams Moulton block method using divided difference interpolation

ABSTRACT

This paper will consider a block method for solving delay differential equations (DDEs) using variable step size and order. The coupled block method consists of two and three point block method in a single code presented as in the simple Adams Moulton type. The code will compute the numerical solutions at two and three new values simultaneously at each of the integration step. The approximation of the delay term is estimated using the divided difference interpolation. The P-stability and Q-stability regions are also illustrated. The numerical results for the coupled block method were superior compared to the existing block method. It is clearly shown that the code is able to produce good results for solving DDEs.

Keyword: Block method; Variable step size and order; Delay differential equations