

Two-point explicit and implicit block multistep methods for solving special second order ordinary differential equations

ABSTRACT

In this paper two-point implicit and explicit block multistep methods have been derived for solving special second order ordinary differential equation (ODE). The solution of initial value problem is approximated at two points simultaneously. The methods of step number $k=3$ and $k=5$ are derived and implemented by using predictor-corrector technique. The numerical results show that the new methods give a promising results compared to the existing methods based on several tested problems.

Keyword: Multistep methods; Block methods; Special second order ODEs