

Solving nonlinear two point boundary value problem using two step direct method.

ABSTRACT

In this paper, we present two step direct method of Adams Moulton type (2PDAM4 and 2PDAM5) for solving nonlinear two point boundary value problems (BVPs) directly. The two step direct method will be utilised to obtain a series solution of the initial value problems at two steps simultaneously. These methods will solve the nonlinear second order BVPs by shooting technique using constant step size. Three step iterative method is considered as a procedure for solving the nonlinear equations and the convergence of the shooting technique. Numerical results are given to illustrate the efficiency and performance of the direct method by the shooting technique with root finding via three-step iterative method for solving boundary value problems. The results clearly show that the two step direct method is able to produce good results compared to the existing method.

Keyword: Boundary value problem; Direct method; Shooting technique.