

Solving third order boundary value problem using fourth order block method

ABSTRACT

A fourth order two-point block method is developed for solving nonlinear third order boundary value problems (BVPs) directly. The two-point block method will solve the nonlinear thirdorder BVPs at two points simultaneously within the block. The shooting technique will use the Newton's method for checking of the convergent and the guessing values for the next block. Theproposed method will be implemented using constant step size and the PECE mode. Numerical examples is presented to illustrate the applicability of the propose method. The results clearly show that the proposed block method is able to produce good results compared to the existing method.

Keyword: Boundary value problem; Linear shooting method; Block method.