A Reliable Treatment for Solving Nonlinear Two-Point Boundary Value Problems

Mustafa Inc

Firat University, Department of Mathematics, 23119 Elazig, Turkey

Reprint requests to M. I.; E-mail: minc@firat.edu.tr

In this paper, we study the modified decomposition method (MDM) for solving nonlinear two-point boundary value problems (BVPs) and show numerical experiments. The modified form of the Adomian decomposition method which is more fast and accurate than the standard decomposition method (SDM) was introduced by Wazwaz. In addition, we will compare the performance of the MDM and the new nonlinear shooting method applied to the solutions of nonlinear two-point BVPs. The comparison shows that the MDM is reliable, efficient and easy for solving the nonlinear two-point BVPs.

Key words: Adomian Polynomials; Nonlinear Two-Point Boundary Value Problems; Padé Approximation.