Solving duffing type differential equations using a three-point block variable order step size method

ABSTRACT

This research proposes a three-point block method for solving Duffing type higher order ordinary differential equations (ODEs) which is also commonly referred as the Duffing oscillator. The research conducted implements a variable order step size technique for approximating the exact solution for the Duffing Oscillator. The proposed algorithm will be tested against various Duffing oscillators and numerical approximation will be compared with current viable methods. The accuracy and efficiency of the proposed method will be illustrated in the numerical results.