

Abstract

The purpose of the research is to inquire the analytical results for the Duffing Equation by means of Modified Variational Iterative Method (MVIM). In this work, we proposed a modified form of Laplace based Variational Iteration Method (VIM) for Duffing Equation, where the Lagrange multiplier is adopted to handle the natural frequency of Duffing Equation. Then analytical results are compared with the numerical solution obtained by Runge-Kutta-Fehlberg method (RKF45) via MAPLE. Furthermore, along different initial condition we obtained different graphs of the solution.

Keywords: Duffing Equation, Modified Variational Iterative Method, Runge-Kutta-Fehlberg method.