

Simulation of the predator-prey problem by the homotopy-perturbation method revised

Abstract

In this paper, the predator-prey problem is revisited. Previous solution by homotopy-perturbation method (HPM) is improved by treating the homotopy-perturbation method as an algorithm in a sequence of intervals (i.e. time steps) called the multistage homotopy-perturbation method (shortly MHPM). Numerical results show that the multistage homotopy-perturbation method and the classical fourth-order Rungge-Kutta (RK4) methods are in complete agreement.