

Approximate analytical solution for solving nonlinear Schrodinger equation

ABSTRACT

The purpose of this article is to propose and implement the Multi-step Modified Reduced Different Transform (MMRDTM) to obtain a solution of the nonlinear Schrodinger equation (NLSE). By the proposed technique, we replaced the nonlinear term of the NLSE with the equivalent Adomian polynomials prior to adopting the multi-step approach. Therefore, we can get solutions with reduced complexity for NLSEs. Furthermore, the solutions can be approximated more precisely over a more extended time period. In order to demonstrate the efficiency and accuracy of the MMRDTM, we examined examples of NLSE and graphed the features of the solutions.