

Solving Cubic and Coupled Nonlinear Schrodinger Equations using the Homotopy Analysis Method

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Abstract

The homotopy analysis method (HAM) is one of the important analytical methods , which introduces a series solution for nonlinear problems. HAM Contains the auxiliary parameter which gives a way to adjust and control the convergence region of series solution. New application of homotopy analysis method are introduced using the parameter to guarantee the convergence of the series solutions of nonlinear differential equations.

Keywords: Homotopy analysis method; Auxiliary parameter modified HAM; Nonlinear differential equations; System of differentid equations.