Analytical Solution of Second-Order Hyperbolic Telegraph Equation by Homotopy Analysis Method

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In this Letter, the homotopy analysis method is applied to obtain the solutions of the initial value problem of hyperbolic type which is called telegraph equation.This analytic technique is valid for dealing with the nonlinearity and provides a convenient way of controlling the convergence region and rate of the series solution. The results obtained by the present method are compared with exact solutions. The results reveal that the implemented technique is very effective and convenient for solving nonlinear partial differential equations.Some illustrative examples are presented to show the efficiency of the method.

References

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