International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 6 No. I (January, 2012), pp. 113-121

INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS AND ITS APPLICATIONS

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Abstract

The method of separation of variables is used to solve Burger's equation as an example. In a new approach to application of separation method we will show that this method effectively in many cases for solving nonlinear partial differential equations.

In this article, we develop a method to obtain approximate solution of nonlinear coupled partial differential equations with the help of Laplace decomposition Method. The technique is based on the application of Laplace transform to nonlinear coupled differential equations. The nonlinear term can easily handled with help of Adomian polynomials. We illustrate this technique with the help of following example.

Key Words : *Separation Method of Variable, Approximate Solutions, Laplace Decomposition Method, Non-linear Coupled Partial Differential Equations.*

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