Differential Transform Method: Some Important Examples

Authors : M. Jamil Amir, Rabia Iqbal, M. Yaseen

Abstract : In this paper, we solve some differential equations analytically by using differential transform method. For this purpose, we consider four models of Laplace equation with two Dirichlet and two Neumann boundary conditions and K(2,2) equation and obtain the corresponding exact solutions. The obtained results show the simplicity of the method and massive reduction in calculations when one compares it with other iterative methods, available in literature. It is worth mentioning that here only a few number of iterations are required to reach the closed form solutions as series expansions of some known functions.

Keywords : differential transform method, laplace equation, Dirichlet boundary conditions, Neumann boundary conditions
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020