Approximate Solutions of The Cauchy Problem for The Heat Equations

Deniz Ağırseven[1]

[1] Department of Mathematics, Trakya University, 22030, Edirne, TURKEY

Abstract

Homotopy Analysis Method (HAM) [1-2] is applied to the problem of the one-dimensional heat equations with a non-linear heat source subject to the temperature and the heat flux given at a single boundary to obtain the analytical solutions. Solutions obtained take an important place for one-dimensional heat flow as applied to a few regular geometries such as slabs, cylinders and spheres. Some of the test problems are presented to show the efficiency of HAM.

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