HOMOTOPY ANALYSIS TO RADIATION EFFECTS ON MHD VISCO-ELASTIC FLUID FLOW AND HEAT TRANSFER OVER A STRETCHING SHEET WITH LARGE PRANDTL NUMBERS

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Abstract

In this paper, we study the MHD flow and heat transfer characteristics of a visco-elastic fluid flow over a stretching sheet in the presence of thermal radiation by taking large Prandtl numbers. The obtained partial differential equations are converted into ordinary differential equations using similarity transformation. These equations are solved analytically using an efficient technique known as homotopy analysis method (HAM). The effects of various parameters on velocity and temperature are shown graphically and are discussed in detailed. The comparison of our HAM results with the existing results shows that HAM results are in good agreement with the existing results.

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