The Analytical Solutions for Magnetohydrodynamic Flow of a Third Order Fluid in a Porous Medium

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An analysis has been carried out for flow and heat transfer characteristics in a third grade fluid between two porous plates. The electrically conducting fluid fills the porous medium. The solutions have been developed for small porosity and magnetic field. Three flow problems are investigated and analytical expressions for the velocity field and temperature distribution are given for each case. Moreover, we recover and extend the results of Siddiqui et al. [1] by presenting exact solutions for the governing equations derived in [1].