About Unsteady Magnetopolar free Convection flow cdots in a Slip flow Regime

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ABSTRACT: *It is written that The objective of this paper is to study the effects of different parameters on an unsteady magnetopolar free convection flow of an incompressible fluid in the presence of thermal radiation and uniform magnetic field of strength B_0 through a porous medium in slip flow regime. The suction velocity is considered to be variable and the fluid is assumed to be gray; emitting absorbing but non scattering medium. The governing boundary layer equations with the boundary conditions are first converted into dimensionless form by non-similar transformations, and then resulting system of coupled non-linear partial differential equations are solved by series expansion method. The expressions for velocity (u), angular velocity (ω), temperature (θ), concentration (C), skin friction (C_f) and rate of heat transfer (Nu) are obtained. The results obtained have been presented, separately in two basic fluids air ($Pr=0.71$, $Sc=0.22$) and water ($Pr=7$, $Sc=0.61$), numerically through graphs to observe the effects of different parameters and the physical aspect of the problem. We observe that on decreasing Gr (thermal Grashof number), skin friction drops in air but rises in water. Also we notice that the rate of heat transfer rises on decreasing h_2 (jump parameter).*

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