Hall effects on the MHD Couette flow between two infinite horizontal parallel porous plates in a rotating system under the boundary layer approximations have been studied. One of the plate is
Hall Effects on MHD Couette Flow in Rotating System

held at rest and the other one moves with uniform velocity. An exact solution of governing
equation has obtained in closed form. Asymptotic behavior of the solution has analyzed for
large values of magnetic parameter, rotation parameter and Reynolds number. It is observed
that a thin boundary layer is formed near the stationary plate for large values of the rotation
parameter, magnetic parameter and Reynolds number. The thickness of these boundary layers
increases with increase in Hall parameter. The heat transfer characteristic has also discussed
on taking viscous and Joule dissipations into account. It is found that an increase in Hall
parameter, the temperature in flow field increases.

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Index Terms

Computer Science

Applied Mathematics
Keywords

Hall effects  MHD Couette  Magnetic parameter

Hall parameter
Rotation parameter
Reynolds number
Joule dissipations
Heat transfer
Boundary layer