Abstract

A numerical study for steady MHD flow of liquid metal through a square duct with slip walls has been carried out. An intense external magnetic field is acting normal to two walls of the square duct which are considered as slip walls. The numerical solutions for velocity and induced magnetic field have been obtained by using a 5 point stencil central difference scheme. Solutions for velocity and induced field for different values of Hartmann number and with consideration of a fixed value of slip length parameter are presented graphically.

References

Numerical Study of Liquid Metal MHD Duct Flow under Hydrodynamic “Slip” Condition

- Smolentsev, S. 2009. MHD duct flows under hydrodynamic "slip" condition. Theoretical Computational Fluid Dynamics. 23(6). 557-570.

Index Terms

Computer Science
Applied Sciences

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Liquid metal  Hartmann layer  Square duct  Slip length parameter