Article Abstract

Title:	Steady flow past a sphere in an aligned magnetic field at high Reynolds numbers
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Journal:	*International Journal of Engineering, Science and Technology*, Vol. 6, No. 1, 2014, pp. 1-19
Abstract:	The flow of steady, incompressible, viscous, electrically conducting fluid past a sphere in the presence of an uniform magnetic field parallel to the undisturbed flow is investigated using the finite difference method. The multigrid method with defect correction technique is used to achieve the second order accurate solution. The Hartmann number, M is used as the perturbation parameter. It is found that the increase of magnetic field decreases the wake length and increases the drag coefficient. The graphs of streamlines, vorticity lines, drag coefficient, surface pressure and surface vorticity are presented and discussed.
Keywords:	Navier-Stokes equations, MHD, Hartmann number, Multigrid method, Defect correction.