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Annular Axi-Symmetric Stagnation Flow of Electrically Conducting Fluid on a Moving Cylinder in the Presence of Axial Magnetic Field

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Abstract : An attempt is made where an electrically conducting fluid is injected from a fixed outer cylindrical casing onto an inner moving cylindrical rod. A magnetic field is applied parallel to the axis of the cylindrical rod. The basic governing set of partial differential equations for conservation of mass and momentum are reduced to a set of non-linear ordinary differential equation by introducing similarity transformation, which are integrated numerically. A perturbation solution for the case of large magnetic parameter is derived for constant Reynolds number.

Keywords : annular axi-symmetric stagnation flow, conducting fluid, magnetic field, moving cylinder
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