



**UNSTEADY HYDROMAGNETIC LAMINAR FLOW BETWEEN
TWO PARALLEL INFINITE PLATES ONE MOVING IN THE
DIRECTION OF FLOW**

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Abstract

This paper addresses the study of hydromagnetic laminar unsteady flow of an incompressible viscous fluid between two parallel infinite plates one of which is moving in the direction of fluid flow and the other is stationary. We investigate how Reynolds number affects both the velocity and temperature profiles of the fluid flow which is subjected to a transverse magnetic field. The research examines the specific equations of MHD flow for the problem which are solved numerically using explicit finite difference method. The numerical results of the study reveal that an increase (a decrease) in Reynolds number causes an increase (a decrease) in the velocity and temperature profiles.

Keywords and phrases: magnetohydrodynamic (MHD) flow, magnetic field, Navier-Stokes equations, parallel plates, finite difference solution.

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