

# The Effect of Height Ratio $h$ on Two Ionized Fluids through a Horizontal Channel between Two Parallel Walls

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## ABSTRACT

We consider a steady state two-dimensional two-fluid flow of an ionized gas bounded by two infinite horizontal parallel walls ( $y=h_1$  and  $y=h_2$ ) extending in  $x$ - and  $z$ -directions under the action of a uniform transverse magnetic field  $B_0$  applied in the  $y$ -direction, that is, normal to the plane of flow. We assume that, both the fluid and walls are in a state of rigid rotation with uniform angular velocity about  $y$ -axis normal to the walls.  $K$  is the Taylor number (rotation parameter). The effect of flow parameters on the fluid's temperature and the heat transferred between the fluids and the walls is considered, using the fully developed two-fluid.