



Item Navigation

Channel Flow

Channel flow, or Poiseuille flow, consists of an incompressible fluid flowing between two infinite plates separated by a distance d , but with both plates stationary. Here, the fluid flows between the two plates in the direction of a constant pressure gradient. Choose a coordinate system so that the fluid flow is in the x -direction and the y -axis is perpendicular to the two plates. Find the solution for the velocity field of the form $\mathbf{u}(x, y, z) = u(y)\mathbf{i}$, with $p = p(x)$, $dp/dx = -G$ and G is a positive constant.

Note: Remember, you may check the solutions in the lecture notes.

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