

1067-76-1091 **Ahmed kaffel*** (kaffel@vt.edu), 1404 J university city blvd, Blacksburg, VA 24060, and
Michael Renardy. *Surface modes in inviscid free surface shear flows.*

We investigate the linear stability of inviscid plane Poiseuille flow between two parallel free surfaces. We show that there are short wave instabilities with eigenfunctions localized near the free surface and derive the asymptotics of these modes. (Received September 18, 2010)