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Rayleigh Taylor Instability in the presence of Non-uniform Flow[1]

S. SEN, Lancaster University, UK — We study the Rayleigh-Taylor Instability in the presence of an equilibrium flow which varies across the cross section. It is found when the flow varies linearly with the radial coordinate (flow shear) the growth rate of the instability increases whereas for the quadratic variation with the radial coordinate (flow curvature) the mode is stabilized. This might have important implications in inertial confinement fusion where the stabilization of Rayleigh Taylor mode is one of the biggest obstacles for energy generation by fusion. This result will also have important implications in identifying the origin of various space fluctuations.

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