**ABSTRACT**

In this paper, the hydrodynamic stability against small perturbations is investigated on parallel shear flow U(z) in an unsteady, inviscid, incompressible fluid of variable density 𝜌0(𝑧). The linear stability of a stratified shear fluid rotating about a vertical axis with constant angular velocity is analyzed assuming long wavelength approximations (𝑘 ≪ 1). The eigen value problem is solved numerically assuming rigid fixed boundaries. Analytical expressions are carried out to calculate the growth rate using method of small oscillations. It is found that when Ri is small, the flow is unstable, as Ri increases, the flow becomes unstable.