2D stratified cavity flow under harmonic forcing[1] BRUNO WELFERT, JUAN LOPEZ, STEPHANIE TAYLOR, Arizona State Univ — Turbulence at the boundary of a stably stratified fluid region can penetrate deep into the region provided the turbulence contains sufficient energy at frequencies less than the buoyancy frequency. This phenomenon manifests itself in the form of internal waves at angles which depend on the perturbation frequencies. Here we consider a 2D lid-driven cavity flow with an imposed stable linear temperature gradient on the sidewalls and constant cold temperature on the bottom and constant hot temperature on the driven lid. In particular, we determine numerically the response to harmonic oscillations of the lid over a range of frequencies and identify resonances and the dynamics associated with their saturation.

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Date submitted: 30 Jul 2014   Electronic form version 1.4