

Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Fluid flow in a vertically oscillating, stably stratified cubic cavity JASON YALIM, BRUNO WELFERT, JUAN LOPEZ, KE WU, Arizona State University — The dynamics of a fluid flow inside a vertically oscillating and stably stratified cubic cavity are investigated. Numerical simulations reveal an intricate pattern of states characterizing the response for each frequency and amplitude of the forced oscillations. It is shown how these states correspond to superpositions of internal wave modes associated to harmonic and subharmonic resonance tongues within the parameter space. The breaking of internal waves, which provides a mechanism for energy dissipation, is also illustrated.

Jason Yalim
Arizona State Univ

Date submitted: 01 Aug 2017

Electronic form version 1.4