



Observations on an internal wave attractors in a stratified fluid

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We present new experimental and theoretical results on the dynamics of internal wave attractors in a semi two-dimensional trapezoidal basin. In particular, we demonstrate how a basin-scale mode forced by simple mechanical excitation develops an equilibrium spectrum. We find a balance between focusing of the basin-scale internal wave by reflection from a single sloping boundary and viscous dissipation of the waves with higher wave numbers. Theoretical predictions using a ray-tracing technique are found to agree well with direct experimental observations of the waves. With this we explain the observed behaviour of the wave attractor during the initial development, steady forcing, and decay of the wave field after the forcing is terminated. We also predict the spatial scale of the wave attractor.