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Internal wave generation by a distributed vortex SURUPA SHAW, JOHN MCHUGH, University of New Hampshire — Internal wave generation in a continuously stratified fluid by a mature vortex pair and by a distributed line vortex is considered using direct numerical simulations. For large Froude number, the distributed vorticity for the line vortex quickly rolls up and forms a vortex pair, approximately matching the case that is initiated as a vortex pair. However for small Froude number, both cases disintegrate into internal waves. Recent results show that both cases exhibit a strong vertical oscillation with a frequency that depends on the buoyancy frequency N. The wave generation causes the initial energy to spread in the radial direction, however after several oscillations at the buoyancy frequency the spreading is slow and the overall size of the structures become approximately constant. The internal wave generation is identified by distinct radial structures in contours of energy flux.

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