

Abstract Submitted
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**Conversion of Internal Waves into Non-Dispersive waves:
Part II Simulations** GEOFFREY VASIL, The University of Sydney,
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CANTIELLO, KITP, KEATON BURNS, MIT — The character of internal waves
changes with variations of the background in which they propagate. We present
Boussinesq simulations of internal gravity waves in a magnetized fluid, which also
supports non-dispersive magnetic waves. The simulations show that internal gravity
waves are strongly altered as they propagate into regions of strong magnetic field.
Theoretically, we expect complete conversion from internal gravity waves into mag-
netic waves in regions of strong field. We confirm this by comparing the simulation
with a phase-integral approximation to the solution in terms of Mathieu functions.
The approximate solution breaks down near critical layers where dissipation is ex-
pected to be important.

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