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Conversion of Internal Waves into Non-Dispersive Waves: Part I Background Theory DANIEL LECOANET, Princeton Univ, GEOFFREY VASIL, University of Sydney, JIM FULLER, Caltech, MATTEO CANTIELLO, Flatiron Institute, KEATON BURNS, MIT — The character of internal waves changes with variations of the background in which they propagate. This is especially important in media that support other types of wave modes. If this occurs, the internal wave can interact with other waves, leading to reflection, transmission, and conversion. We study the propagation of internal gravity waves in a magnetized fluid which supports non-dispersive magnetic waves. This problem may be important for interpreting observations of stars. Because the group and phase velocity of internal waves are perpendicular (whereas they are parallel for non-dispersive waves), we argue that we expect conversion between internal and magnetic waves where the magnetic field exceeds a critical amplitude.

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