

Abstract Submitted
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Low frequency instabilities in dusty magnetized plasmas¹ MARLENE ROSENBERG, Dept. of Electrical and Computer Engineering, University of California, San Diego — Motivated by current and upcoming dusty plasma experiments with large magnetic fields, we consider several electrostatic instabilities that could arise when (1) only the ions and electrons are magnetized, or (2) all the charged particles are magnetized. In the first category, we consider the excitation of dust acoustic type waves by cross-field drifts that may occur due to the presence of an electric field or density inhomogeneities perpendicular to the magnetic field. In the second category, we consider conditions under which electrostatic dust cyclotron (EDC) waves could be excited. We focus on the excitation of higher harmonic EDC waves, since these have shorter wavelengths than the fundamental mode and thus might be more easily accommodated in a dusty plasma device.

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