

Abstract Submitted
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Probe induced voids at high magnetic field SPENCER LEBLANC, EDWARD THOMAS, Auburn University — The presence of voids (dust free regions) in dusty plasmas has been considered for some time. Early studies include the observation of the “great void mode” in a laboratory experiment with growing dust grains and self-generated voids in microgravity experiments generated by a balance of an outward ion drag force and an inward electrostatic force acting upon the dust grains. In addition to self-generated void structures, there have also been studies of void regions formed around biased probes in dusty plasmas. In the presence of a magnetic field, it is anticipated that the ion drag force will become modified as the transport of ions in the plasma becomes constrained to magnetic field lines. As a result, the balance between the electrostatic and ion drag forces may be modified, leading to changes in void formation and geometry. This presentation will discuss an experimental study of the modification of the void region around a negatively biased probe in a dusty plasma at high magnetic field. A method for characterizing the void shape will be presented. The effects of the magnetic field, plasma generation, and biasing on void size and eccentricity are investigated.

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