

Abstract Submitted
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Diffraction of Dust Acoustic Waves¹ SU-HYUN KIM, JONATHON R. HEINRICH, ROBERT L. MERLINO, University of Iowa — We present observations of the diffraction of dust acoustic (DA) waves around various objects. The DA waves are excited spontaneously in a dusty plasma produced in a DC glow discharge. The waves are imaged by laser light scattering and digitally recorded using a CCD camera. We have studied the diffraction of DA waves by a dielectric rod and by a rectangular slit of variable width. The wavelengths of the DA waves are comparable to the effective size of the object which is determined by the dust void around it. The void is formed due to the expulsion of the negatively charged dust particles by the object which also acquires a negative charge. The results of the diffraction by the rod are compared with the diffraction pattern produced by sound waves incident on a cylinder.

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Robert Merlino
University of Iowa

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