Abstract Submitted
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Experimental study of plasma sheath conformation to rectangular depression ANDREW MAGYAR, T.E. SHERIDAN, Ohio Northern University — We will characterize the plasma sheath above a rectangular depression in an otherwise flat, horizontal electrode in the Dusty ONU experimenT (DONUT) using micrometer-sized plastic spheres floating inside the sheath. Center-of-mass frequencies for two-particle clusters excited by Brownian motion will be analyzed in the plane parallel to the electrode to determine to ellipticity of the equipotentials above the depression, i.e., the conformation of the sheath to the depression, as a function of the aspect ratio of the depression. The particle charge can be found from the breathing mode frequency allowing an estimate of the Debye length and vertical electric field, and a measurement of the vertical resonance frequency gives the electric field gradient.

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