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**Dust Particle Probes in a Complex Plasma** ANGELA DOUGLASS, TRUPELL HYDE, LORIN MATTHEWS, MICHAEL POPE, BERNARD SMITH, CASPER - Baylor University — In dusty plasma experiments within a GEC rf reference cell, the confining potential is generally assumed to be parabolic. The validity of this assumption can be tested in a number of ways. One noninvasive method is to utilize the particles themselves as system probes. In this experiment a cw laser (0.1-5W, 532nm) was used to apply a radiation pressure force on a single MF particle. The particle's trajectory while the laser was on and off was recorded and the confining potential calculated. System power, pressure, DC bias, and cutout size of the plate placed on the powered electrode were varied in order to better understand their effects on the shape of the confining potential.

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