

Abstract Submitted
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Potential Mapping of an Indium-Tin-Oxide Glass Box in a GEC Reference Cell¹ REBECCA KAPLAN, Towson Univ, JORGE CARMONA-REYES, TRUELL HYDE, LORIN MATTHEWS, Baylor University, CASPER PROGRAM TEAM — The use of indium-tin-oxide (ITO) coated boxes, as well as boxes coated with other substances, placed on or floating above the lower electrode in studies using Gaseous Electronics Conference Radio Frequency Reference Cells have increased in interest, as have the use of plain glass boxes. This increase in interest is due to the greater ability to control the confinement forces and in effect create dust chain structures which aid in studies within other areas of physics such as; entropy, kinetic dust temperature, plasma balls and coulomb explosions. Further analysis of the data obtained using these boxes shows what appear to be at least two different regions of confinement inside the boxes as well as some unexpected phenomena related to anomalous values and behavior of the electric field. These areas affect the dust to dust and dust to plasma interactions independently in the separate regions and are therefore of great interest. In this study electric potential and electric field maps created in MatLab with data obtained using two probes mounted on CASPER's S-100 nano-manipulator will be presented, connecting the information obtained from these maps to the behavior of the dust observed for different experimental conditions.

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