Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Phenomenological Studies of an Indium-Tin-Oxide (ITO) Box in a RF Plasma[1] JORGE CARMONA-REYES, REBECCA KAPLAN, JIMMY SCHMOKE, MICHAEL COOK, LORIN MATTHEWS, TRUELL HYDE, CASPER - Baylor University — Studies using either a glass box or an Indium-Tin-Oxide (ITO) coated glass box, placed on the lower powered electrode of a GEC RF reference cell have become popular in the field of complex plasmas due to their ability to provide a more controlled environment. However, recent experimental data have shown two independent confinement regions within such boxes, impacting both dust-dust and dust-plasma interaction measurements. This study presents a series of potential maps created using a passive probe mounted on CASPER's S-100 nano-manipulator. The data collected has been correlated into potential field maps and is compared against dust behavior for various experimental operating conditions. The impact of these results on current complex plasma measurements will be discussed.

[1]Support from the NSF and the DOE (award numbers PHY-1262031 and PHY-1414523) is gratefully acknowledged.

Truell Hyde
CASPER - Baylor University

Date submitted: 21 Jul 2015 Electronic form version 1.4