Abstract Submitted
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Inertial-Electrostatic Confinement Modeling, Parametric Variation, and Comparison to Experiments[1] GILBERT EMMERT, JOHN SANTARIUS, DAVID DONOVAN, University of Wisconsin — In inertial-electrostatic confinement (IEC), a high voltage accelerates ions between concentric, nearly transparent grids, usually in spherical geometry. For typical parameters ($\sim$0.3 Pa$\approx$2 mTorr, $\sim$100 kV, $\sim$30 mA, $\sim$0.5 m anode diameter), atomic and molecular processes dominate operation. A numerically solved integral equation approach to modeling D^+, D_2^+, and D_3^+ ions passing radially through D_2 background gas [1] will be summarized. The approach yields the energy spectra of ions and neutrals plus the neutron production. Parametric surveys and comparisons with experimental data for a University of Wisconsin IEC device will be presented.

[1] G.A. Emmert and J.F. Santarius, "Atomic and Molecular Effects on Spherically Convergent Ion Flow I: Single Atomic Species" and "Atomic and Molecular Effects on Spherically Convergent Ion Flow II: Multiple Molecular Species," submitted to *Physics of Plasmas* (2009).

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