

Abstract Submitted
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Ion Energy Distribution Function Measurements in the Irvine FRC W.S. HARRIS, E.P. GARATE, W.W. HEIDBRINK, R. MCWILLIAMS, T. ROCHE, E. TRASK, Y. ZHANG, University of California, Irvine — A time-of-flight diagnostic has been implemented on the Irvine Field Reversed Configuration (IFRC) to obtain an energy distribution function from charge-exchanged neutral hydrogen. The diagnostic includes a 13cm radius slotted disk rotating at 165Hz in vacuum which chops the emitted neutrals at a rate of 27kHz. In-situ timing verification was performed with a DC xenon discharge lamp with an uncertainty less than 100ns for a $38\mu\text{s}$ chopping period. Energy calibration was accomplished with a lithium ion source in the range of 300-1500eV, presently achieving an average energy uncertainty, $\Delta E/E$, of 0.23 prior to further analysis. The diagnostic has measured neutrals in the range of 20-80eV from the Irvine FRC and the corresponding energy distribution function has been obtained.

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