

Abstract Submitted  
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**On particle temperature in CSDX** ALEXANDER JAMES, GEORGE TYNAN, UCSD, Jacobs School of Engineering — The Controlled Shear Decorrelation eXperiment (CSDX) was constructed to study collisional drift turbulence in a linear, uniform magnetic field. Ion and neutral temperatures play a role in the viscous damping and ion-neutral flow drag respectively, and thus are relevant to understanding drift turbulence in this simple system. In this poster we present high resolution (0.01 Angstrom) emission spectroscopy measurements of Ar-I and Ar-II emission from this device and then deconvolve the results with the instrument response function to find ion and neutral temperatures. Both temperatures are found to increase with magnetic field in the device. The peak ion and neutral temperatures are 1.0 eV and 0.5 eV at a magnetic field of 1kG. The observed temperatures are explained in terms of a simple volume-averaged collisional heating model.

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