

Abstract Submitted
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Ion Spin-Up, Temperature, and Flow Measurements in the TCSU Experiment C.L. DEARDS, J.A. GROSSNICKLE, L.C. STEINHAUER, P.A. MELNIK, R.D. MILROY, University of Washington, Redmond Plasma Physics Laboratory — The Translation, Confinement, and Sustainment Upgrade (TCSU) experiment employs a bakeable ultra-high vacuum chamber to reduce impurities and overall recycling. In recent experiments with Ti gettering applied to the plasma tube, radiation from impurities was dramatically reduced and recycling was almost eliminated. Ion temperature and azimuthal rotation velocities data from the resulting lower density, higher temperature FRC will be presented. The data comes from Doppler-broadening and Doppler-shifted measurements of Si III, C III, and O III, the dominant impurities in the TCSU plasma. Additionally, plans and initial data will be presented on azimuthal and poloidal velocity shear. Velocity shear is thought to improve stability and transport. All data measurements are made using an Acton Research SpectraPro 500i Czerny-Turney type spectrograph.

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