

Abstract Submitted  
for the DPP16 Meeting of  
The American Physical Society

**Main-ion and impurity flows in the DIII-D tokamak**<sup>1</sup> C.M. SAMUELL, S.L. ALLEN, W.H. MEYER, A.E. JAERVINEN, LLNL, A.R. BRIESEMEISTER, ORNL, J. HOWARD, ANU — Plasma flows and drifts are integral to determining the bulk transport of particles and energy throughout the tokamak. Helium discharges provide an opportunity to observe velocities of both main-ion (HeII) and impurity (CIII) species. Coherence Imaging Spectroscopy (CIS) on DIII-D has been used to generate a poloidally-complete view of the SOL velocity profiles, which was used to investigate the transition from lower single null (LSN) to upper single null (USN) topologies. Main-ion and impurity velocities up to 30 km/s were observed with the fastest velocities appearing near limiter and target surfaces. A change in flow direction was observed during the transition from LSN to USN. This transition caused a much more gradual change on the outboard mid-plane compared to the inboard side where the transition was sharp. Highly localized flow reversal associated with high emissivity was observed on the in-board midplane highlighting the need for fully-2D flow measurements.

<sup>1</sup>Work supported by the US Department of Energy under DE-AC52-07NA27344 and DE-FC02-04ER54698.

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Date submitted: 14 Jul 2016

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