Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

C^{2+} Flow Measurement in DIII-D Using Coherence Imaging Spectro-Polarimetry[1] T.R. WEBER, S.L. ALLEN, D.N. HILL, W.H. MEYER, G.D. PORTER, Lawrence Livermore National Laboratory, J. HOWARD, Australian National University — Recently, C^{2+} flows have been measured at DIII-D using a recent, advanced technique in coherence imaging spectroscopy [1]. The diagnostic yields a two dimensional C^{2+} flow measurement over of the entire lower divertor, with approximately ± 1 cm resolution in space, and approximately ± 2 km/s resolution in velocity. Preliminary analysis of data from a plasma shot during the 2010 campaign yields high flow ($\sim$30 km/s) near the X-point and a flow reversal between the low and high field side of the scrape-off-layer. Results are in good agreement with predictions from the fluid plasma code, UEDGE. A discussion on the fundamental physics behind the flow as indicated by experimental and UEDGE results will be included. Data will likely prove useful in efforts to understand impurity transport processes critical in tokamak operations.

[1] J. Howard, et al., Rev. Sci. Instrum. **81**, 10E528 (2010).

[1]Work supported in part by US DOE under DE-AC52-07NA27344.

Tobin Weber
Lawrence Livermore National Laboratory

Date submitted: 20 Jul 2011 Electronic form version 1.4