

Abstract Submitted
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Coherence Imaging Spectroscopy Validation on the Compact Toroidal Hybrid¹ N.R. ALLEN, D.A. ENNIS, G.J. HARTWELL, C.A. JOHNSON, D.A. MAURER, Auburn Univ, C.M. SAMUELL, S.L. ALLEN, LLNL — Two-dimensional profiles of line-integrated impurity emissivity and velocity in the Compact Toroidal Hybrid (CTH) experiment are obtained from Coherence Imaging Spectroscopy (CIS), a polarization interferometry technique with fixed delays. CIS impurity flow measurements are beneficial for understanding the role of ion transport in the plasma edge and comparisons to modeling. Characterization of the CIS interferometer on CTH has shown that external environmental factors have less than a 1 km/s influence on the ion velocity measurements. Efforts to validate the CIS absolute ion velocity measurements in CTH have been made by comparisons with traditional dispersion spectroscopy along multiple sightlines yielding preliminary agreement within 3 km/s. CIS measurements of ion flow in differing plasma conditions, such as magnetic field configuration, applied loop voltage and majority ion species, will be presented. .

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