

Carbon ion flow measurements in DIII-D divertors by coherence imaging

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Abstract. Coherence Imaging Spectroscopy (CIS) obtains an interferogram image of plasma impurity emissions at a fixed optical delay. For the results presented here, the CIS optical delay is chosen so that the phase of the interferogram is related to the Doppler shift of CIII emissions at 465nm. Recent results from a new side-lab calibration technique agree well with previous model-based calculations of the relationship between CIS phase and wavelength. Data from both the lower and upper divertor systems has been obtained during a wide variety of operating conditions, including lower single null (LSN) and double null (DN) discharges in L- and H-mode. For the upcoming DIII-D run campaign, precise temperature regulation of the CIS along with a new in-situ calibration system has been installed so that absolute velocity measurements should be possible.