

Abstract Submitted
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Active and Passive Spectroscopic Imaging in the DIII-D Tokamak¹ M.A. VAN ZEELAND, GA, J.H. YU, UCSD, N.H. BROOKS, K.H. BURRELL, R.J. GROEBNER, A.W. HYATT, T.C. LUCE, M.R. WADE, GA, N. PABLANT, UCSD, W.W. HEIDBRINK, UCI, W.M. SOLOMON, PPPL — Wide angle, 2D visible imaging of Doppler-shifted, D_α emission from high energy injected neutrals, charge exchange recombination (CER) emission from beam interaction with Carbon VI ions; and visible Bremsstrahlung (VB) from the core of DIII-D plasmas has been carried out using multiple narrowband interference filters combined with a tangentially viewing, fast-framing camera. Measurements of the D_α emission from fast neutrals reveal the vertical beam profile and the variation with density in its radial penetration. Modeling of the D_α emission using lookup tables in the ADAS database yields qualitative agreement. Active measurements of carbon CER brightness are in agreement with those made independently using DIII-D's multichordal, CER spectrometer system, confirming the potential of this technique for obtaining 2D profiles of impurity density. Passive imaging of VB is also carried out and the obtained images are inverted to obtain local emissivity profiles.

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