

Abstract Submitted  
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**High Resolution Density Profile Measurement for Electron Transport Studies in DIII-D**<sup>1</sup> L. ZENG, E.J. DOYLE, T.L. RHODES, W.A. PEEBLES, UCLA, C.C. PETTY, J.C. DEBOO, General Atomics, W.M. SOLOMON, PPPL, T. TALA, VTT/JET — High temporal (to 10  $\mu$ s) and spatial ( $\sim$ 0.5 cm) resolution measurements of density profile evolution via profile reflectometry have been performed in a variety of plasma conditions in DIII-D. These measurements are currently applied to study particle transport. As one example, in a D<sub>2</sub> gas puffing modulation experiment, it is observed that the  $n_e$  modulation can propagate from the edge inward to  $\rho \sim 0.4$ . The dependence of the modulations on  $q$  and collisionality is under investigation. In an experiment with EC power alternately deposited at two close positions, it has been seen that the  $n_e$  profile is significantly modulated by the EC modulations when the EC power at two locations is unbalanced. The  $n_e$  modifications become smaller when the EC power is balanced. For these  $n_e$  modulation datasets, an FFT transport analysis technique will be applied to investigate transport coefficients and particle pinch velocity. In addition, the associated  $n_e$  fluctuations over a broad range of  $k$  will be presented.

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