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High Resolution Density Profile Measurement for Electron Transport Studies in DIII-D,* L Zeng, EJ Doyle, TL Rhodes, WA Peebles, *UCLA*, CC Petty, JC DeBoo, *GA*, WM Solomon, *PPPL*, T Tala, *VTT/JET* — High temporal (to 10 μ 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 D₂ 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 2 close positions, it has been seen that the n_e profile is significantly modulated by the EC modulations when the EC power at 2 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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