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Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory Experiment

Fueling with Edge Recycling to High-density in DIII-D,*

A.W. Leonard, R.J. Groebner, T.H. Osborne, *General Atomics*; J.D. Elder, *U. Toronto* – Pedestal fueling through edge recycling is examined with the interpretive OEDGE code for high-density discharges in DIII-D. A high current, high-density discharge is found to have a similar ionization source profile as a lower current, lower density discharge. The higher density discharge, however, has a greater density gradient indicating a pedestal particle diffusion coefficient that scales near linear with $1/I_p$. The time dependence of density profile is taken into account in the analysis of a discharge with low frequency ELMs. The time-dependent analysis indicates that the inferred neutral ionization source is inadequate to account for the increase in the density profile between ELMs, implying an inward density convection, or density pinch, near the top of the pedestal.

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