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Evolution of Edge Pedestal Current in Type-1 ELM and ITER Baseline Scenario Discharges on DIII-D,* D.M. Thomas, T.H. Osborne, R.J. Groebner, *GA*; H. Stoschus, *ORISE*; X. Chen, *UCI*; K.E. Kaplan, *Duke U.* – Based on recent improvements to the DIII-D LIBEAM diagnostic, we have measured the evolution of the edge plasma current density, j, in the pedestal region during the Type 1 ELM cycle, as well as during variations in pedestal pressure in ITER baseline scenario as the inter-ELM temperature and density evolve separately. Conditional averaging of our signals along with other diagnostics over multiple Type 1 ELMs improves the sensitivity and time resolution of this technique. New methods of accounting for varying background light during the pedestal rise help to reduce the systematic error in the measurement. Initial analysis shows that the current peak can relax by about a factor of two within a few ms after an ELM, consistent with resistive decay times in the edge. Changes in the current amplitude for high frequency ELM conditions are consistent with damping of the neoclassical current at the higher collisionality typically associated with higher edge densities and lowered edge temperatures. These results are in accord with our emerging picture of ELM physics and pedestal formation.

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