

**Abstract Submitted for the Forty-Eighth Annual Meeting  
Division of Plasma Physics  
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Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory      Experiment

**Pedestal Turbulence Evolution After L-H Transition and During ELM Cycles on DIII-D,\*** G. Wang, W.A. Peebles, E.J. Doyle, T.L. Rhodes, L. Zeng, X.V. Nguyen, *UCLA*, G.J. Kramer, R. Nazikian, *PPPL*, P.B. Snyder, T.H. Osborne, R.J. Groebner, K.H. Burrell, A.W. Leonard, E.J. Strait, *GA*, M.E. Fenstermacher, *LLNL* – High-resolution quadrature reflectometer density fluctuation measurements ( $\tilde{n}_e$ ) have been obtained on DIII-D during H-mode pedestal studies. Initial results indicate that turbulence evolution after the L-H transition and prior to the first ELM appears dependent on pedestal beta ( $\beta_{ped}$ ); in high  $\beta_{ped}$  discharges, there is a significant increase in both local  $\tilde{n}_e$  and magnetic turbulence (as observed on magnetic loops) leading up to the first ELM, while the turbulence in low  $\beta_{ped}$  discharges shows little change. This  $\beta_{ped}$  dependence suggests electromagnetic effects on pedestal turbulence. Later during Type-I ELM cycles two cases are observed: a low level of magnetic turbulence together with an increased  $\tilde{n}_e$  level just after the ELM crash, and high magnetic fluctuation levels with a decrease in  $\tilde{n}_e$  after the ELM crash. Comparisons will be made with electromagnetic turbulence models.

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