

**Abstract Submitted for the 50th Annual Meeting
Division of Plasma Physics
November 17–21, 2008, Dallas, Texas**

Category Number and Subject:

[] Theory [X] Experiment

Ratio of Electron Temperature and Density Fluctuation Amplitudes During ECH in DIII-D Ohmic and L-mode Discharges,* A.E. White, L. Schmitz, W.A. Peebles, T.A. Carter, T.L. Rhodes, G. Wang, E.J. Doyle, J.C. Hillesheim, L. Zeng, *UCLA*, G.R. McKee, M. Shafer, *UW-Madison*, J.C. DeBoo, G.M. Staebler, *GA* – An increase in the ratio of the amplitudes of two fluctuating fields, $(\tilde{T}_e/T_e)/(\tilde{n}/n)$, is observed in DIII-D beam-heated (~ 2.5 MW, co-injected) L-mode plasmas during ECH (~ 2.5 MW deposited at $\rho \approx 0.17$). The amplitude of long wavelength temperature fluctuations, \tilde{T}_e/T_e , measured with a correlation ECE diagnostic (CECE), increases significantly during ECH. In contrast, the amplitude of long wavelength density fluctuations, \tilde{n}/n , measured simultaneously with a BES diagnostic, does not change. Linear stability analysis with the TGLF code shows that during ECH the ratio of the TEM and ITG growth rates increases at long wavelengths in the range relevant for the CECE and BES diagnostics. These TGLF results are found to be more sensitive to changes in the TEM drive term a/L_{n_e} compared with changes in a/L_{T_e} or a/L_{T_i} . Sensitivity scans with TGLF and comparisons with new experimental results for the ratio $(\tilde{T}_e/T_e)/(\tilde{n}/n)$ measured in Ohmic plasmas with ECH will also be presented.

*Work supported by the US DOE under DE-FG03-01ER54615, JP333701, DE-FG02-89ER53296, and DE-FC02-04ER54698.