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Effect of ECH on Turbulent Fluctuations During ITER Baseline Scenario-like Discharges on DIII-D[1] A. MARINONI, J.C. ROST, M. PORKOLAB, E.M. DAVIS, Massachusetts Institute of Technology, R.I. PINSKER, K.H. BURRELL, General Atomics, DIII-D TEAM — Recent experiments on the DIII-D tokamak simulating ITER Baseline Scenario discharges have shown a strong increase in the intensity of low frequency fluctuations during intense electron cyclotron heating (ECH) phases [1]. The torque-free and spatially localized pure electron heating, compared to beam heating, is believed to modify flow shear and fluctuations, resulting in a slightly weaker dependence of stored energy on input power compared to the nominal ITER IPB 98(y,2) scaling. Within 30 ms after turning off ECH power, the phase contrast imaging (PCI) diagnostic detects an increase of the intensity of fluctuations at frequencies higher than 200 kHz, likely due to the prompt response of the electron temperature profile; fluctuations at lower frequency decrease in intensity on a longer time scale, after other equilibrium quantities evolve. Nonlinear gyro-kinetic simulations are in progress and will be compared to PCI measurements via a synthetic diagnostic.

[1] R.I. Pinsker et al., to be published in Euro. Phys. J. Conf. (2014).

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