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Effect of ECRH on pedestal structure, turbulence and ELM dynamics in DIII-D[1] SANTANU BANERJEE, SASKIA MORDIJCK, Department of Physics, College of William and Mary, Williamsburg, VA 23187, USA, R GROEBNER, T OSBORNE, General Atomics, T L RHODES, K BARADA, UCLA, P B SNYDER, General Atomics, B GRIERSON, A DIALLO, PPPL — Pedestal structure and instabilities, in different operating scenarios, is a key area of tokamak research as pedestal pressure is a factor for core plasma performance. In DIII-D, ECRH is applied (at ρ =0.2) in increments in NBI shots to study the effects of $T_e/T_i >$1 and density pump-out on the pedestal. For NBI, there are rapid ELMS of varied amplitude, while, for ECRH, the ELM frequency is well-defined, lower than in the NBI shots, and each type-I ELM is followed by one or two very small ELMs. Fast-magnetics show a group of modes at 13˜116 kHz consisting of 3 distinct modes in ECRH shots only. Phase-locked analysis shows that 2 modes at 13˜70 kHz do not grow for the first 10 ms of the inter-ELM period (Δt =0˜10 ms, w.r.t. the ELM crash) and then grow to saturation for Δt =10˜25 ms. Note that ∇n_e, ∇T_e and ∇p_e saturate after Δt =10 ms. These results may indicate that, either ∇p_e needs to reach a certain threshold to trigger the growth of these modes and/or the growth of the modes clamps ∇p_e. An alternative possibility is that the changes in ∇E_r (and hence **E**x**B**) may affect ∇p_e and/or the modes. Note that changes in rotation have been observed at the pedestal for Δt =0˜25 ms. Analysis of pedestal recovery, transport and stability with ECRH will be reported.

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