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Neutral Beam Driven Current During MHD Activity in DIII-D Hybrid Plasmas[1] R. NAZIKIAN, R. BUDNY, N.N. GORELENKOV, G.J. KRAMER, R. WHITE, PPPL, M.S. CHU, C.C. PETTY, P.A. POLITZER, E.J. STRAIT, M.R. WADE, GA, W.W. HEIDBRINK, UC-Irvine, R.J. JAYAKUMAR, LLNL, M.A. VAN ZEELAND, ORISE — The hybrid regime on DIII-D has demonstrated stationary sawtooth free operation for several current diffusion times. However the mechanism for sustaining $q(0) > 1$ is still unclear. One possibility for maintaining $q(0) > 1$ is the redistribution of neutral beam ions by the helical magnetic perturbation of the mode. The structure and magnitude of MHD activity has been obtained on DIII-D from radially resolved ECE measurements in low density Hybrid plasmas. The measured temperature perturbations are consistent with an off axis 3/2 island together with an even parity component of finite amplitude on the magnetic axis. An effective fast ion radial diffusivity will be inferred from transport analysis of the plasma using the TRANSP code and from ORBIT analysis of the beam ion distribution using a model magnetic perturbation matched to the experimental data.

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