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Testing RMP ELM suppression models in low torque ITER Baseline Scenario[1] R.A. MOYER, UCSD, N.M. FERRARO, R.J. GROEBNER, R.J. LA HAYE, T.C. LUCE, T.H. OSBORNE, C. PAZ-SOLDAN, GA, B.A. GRIERSON, R. NAZIKIAN, W.M. SOLOMON, PPPL, T.L. RHODES, L. ZENG, UCLA, G.R. MCKEE, Z. YAN, UW-Madison, J.M. HANSON, F. TURCO, Columbia U., S. MORDIJCK, W&M, M.E. FENSTERMACHER, LLNL — RMP ELM suppression experiments in low torque (T_{inj}) ITER Baseline Scenario provide an excellent test of our emerging model of ELM suppression when the edge plasma bifurcates to tearing response. In 2-fluid theory, this bifurcation occurs where the electron perpendicular rotation $\Omega_{\perp e} \sim 0$, where $\Omega_{\perp e}$ is the sum of the $E \times B$ and electron diamagnetic rotation Ω_{De} frequencies. To extend RMP ELM suppression to $T_{inj} \sim 1$ Nm, we reduced T_{inj} from 5 to 3.5 Nm, which produced lower core radial electric field and loss of ELM suppression as the $\Omega_{\perp e} \sim 0$ point moved deeper into the core. We also varied Ω_{De} at high T_{inj} by reducing the edge electron density, which led to ELM suppression. These results will be compared with expectations from 2-fluid theory.

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