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Sustained Suppression of Type-I Edge Localized Modes with Dominantly n=2 Magnetic Fields in DIII-D[1] M.J. LANCTOT, M.E. FENSTERMACHER, I. JOSEPH, Lawrence Livermore National Laboratory, R.J. BUTTERY, M.R. WADE, T.E. EVANS, N.M. FERRARO, J.S. DEGRASSIE, P.B. SNYDER, General Atomics, R. NAZIKIAN, Princeton Plasma Physics Laboratory, R.A. MOYER, D.M. ORLOV, University of California San Diego, J.M. HANSON, Columbia University, W. SUTTROP, IPP-EURATOM, S. HASKEY, Australia National University — Type-I edge-localized modes (ELMs) are suppressed in DIII-D using magnetic perturbations with dominant toroidal mode number $n = 2$. ELM suppression is obtained with two rows of internal coils for 1.8 s with normalized beta of 1.9 and average triangularity of 0.53 corresponding to a scaled version of ITER scenario 2 at an ITER relevant electron collisionality of 0.2. The applied field reduces the pedestal density, pressure, and edge current without degrading the edge thermal transport barrier. ELITE calculations find the resulting profiles are stable to intermediate-n peeling-ballooning modes. ELM suppression is demonstrated using different upper and lower phases enabling new investigations into the necessary conditions for suppression in terms of the resonant field amplitude and q_{95}.

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