Abstract Submitted
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Integrated Plasma Simulation of Sawtooth Modification via Lower Hybrid Current Drive in Tokamaks[1] P.T. BONOLI, R.R. PARKER, S. SHIRAIWA, G.M. WALLACE, J.C. WRIGHT, MIT-PSFC, R.W. HARVEY, CompX, D.B. BATCHELOR, W. ELWASIF, ORNL, J. CHEN, F. POLI, S.J. JARDIN, C.E. KESSEL, PPPL — An advanced lower hybrid RF (LHRF) actuator component was been implemented in the Integrated Plasma Simulator [1], and has been used to simulate modification of sawteeth via lower hybrid current drive (LHCD). The TSC transport code [2] is used to evolve the background plasma in conjunction with the Porcelli sawtooth model [3], and driven LH current density profiles are computed using the GENRAY ray tracing code which includes a scrape off layer and the CQL3D Fokker Planck code [4]. The integrated model has been tested against a series of experiments [5] in the Alcator C-Mod tokamak in which sawteeth were systematically delayed for increasingly longer periods of time as the level of LHCD was increased.

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