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[ ] Theory [X] Experiment

Experimental Investigation of ITER Startup and Rampdown Scenarios in the DIII-D Tokamak,* G.L. Jackson, A.W. Hyatt, J.R. Ferron, T.C. Luce, D.A. Humphreys, T.W. Petrie, *GA,* T.A. Casper, *LLNL* – ITER scenario studies have focused on the current flattop phase, but reaching current flattop and successful discharge termination (i.e. a "soft landing") must also be considered. Experiments in DIII-D have simulated ITER discharges including low inductive electric field ($E_\phi \leq 0.3$V/m), startup limiting on the low field side (LFS), and ℓ_i control mostly for vertical stability control.. ITER-like LFS startup has been achieved in two scenarios: constant q_{95} (small bore) and a larger volume diverting earlier in time to reduce heat flux to the outer wall (large bore). With a large bore startup, both hybrid and ITER baseline H-mode discharges have been obtained during the flattop phase. We will present the effects of variations in density, auxiliary power, and current ramp rate on ℓ_i. Low voltage startup, $V_{loop} \geq 2.2$ V (0.21 V/m) with EC assist will be discussed and initial results simulating the ITER rampdown phase will also be presented.

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