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Category Number and Subject: 6.20 DIII-D Tokamak

☐ Theory ☒ Experiment

Linear Ideal MHD Stability Analysis for the H-L Transition on DIII-D Using ELITE,* D. Eldon, P.H. Diamond, G.R. Tynan, *UCSD*; L. Schmitz, *UCLA*; R.J. Groebner, P.B. Snyder, T.H. Osborne, T.E. Evans, R.L. Boivin, *GA*; J.D. King, *ORISE* – A controlled normal termination of discharges in a large tokamak such as ITER is a concern. Transitions out of H-mode observed in present devices commonly begin with an ELM-like event, followed by a sudden drop in pedestal height and stored energy. However, peeling-ballooning (P-B) instabilities that trigger type-I ELMs are normally expected when the plasma is being heated, with stored energy and pedestal pressure increasing. To further evaluate P-B stability limits preceding the back transition observed on DIII-D, the ELITE code is being run with measured edge pressure and current profiles to identify the limiting factors.

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