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Theory Experiment

Numerical Study of the Pedestal MHD Stability Limit on Upper and Lower Separatrix Triangularities,* J. von der Linden, *U. Pennsylvania*, A.W. Leonard, R.J. Groebner, T.H. Osborne, P.B. Snyder, *General Atomics* – The dependence of the magnetohydrodynamic (MHD) stability limit of the edge plasma on the upper and lower triangularities of a lower single null configuration is examined numerically. Although high triangularity has long been known to increase the pedestal height and improve confinement, the effect of varying upper and lower triangularities separately has never been investigated systematically. To study this dependence, Grad Shafranov equilibrium files are created using the EFIT code and varying triangularities while a constant pressure profile characteristic of experimental measurements is maintained. The edge current is constrained to match the Sauter bootstrap current model using measured edge plasma profiles. These equilibria are used as inputs for the ELITE code to determine the MHD stability limit. Results from this study can be used for optimization of the boundary geometry and control of the edge pedestal pressure.

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