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Ballooning Stability of Separatrix Spanning Modes\(^1\) J.R. MYRA, D.A. BAVER, D.A. D’IPPOLITO, Lodestar Research Corp., M.V. UMANSKY, L.L. LODESTRO, LLNL, R.J. GOLDSTON, J.H. NICHOLS, PPPL — The ideal ballooning stability of the near-separatrix tokamak plasma and its possible relation to the Greenwald density limit, as discussed in [1], motivates the present work. We consider a sequence of CORSICA-generated equilibrium shapes with varying elongation and examine the marginal stability of infinite-n and finite-n separatrix-spanning modes using the 2DX [2] and ArbiTER [3] eigenvalue codes. The elongation scaling of the result provides a test of the proposed density-limit theory. A new computationally efficient technique for dealing with the phase variation of moderate-n modes across the branch cut in field-line following coordinates will also be discussed.

[3] D. A. Baver et al., this conference

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