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Study of the Resistive Wall Mode in DIII–D[1] A.M. GAROFALO, M.E. MAUEL, G.A. NAVRATIL, S.A. SABBAGH, Columbia University, E.J. STRAIT, R.J. LA HAYE, A.D. TURNBULL, AND THE DIII–D TEAM, General Atomics, B.W. RICE, LLNL — Stability analysis of DIII–D discharges showed kink mode stabilization by a resistive wall in D-shaped plasmas with β_N exceeding the expected no-wall ideal β_N limit by a factor of 1.3.[2] We will call this factor a *wall stability enhancement factor*, $E_w : E_w = \beta_N$ (experiment)/ β_N (no-wall limit, MHD model). Recent DIII–D experiments were aimed at achieving a value of $E_w > 1.3$ in lower single null, JET-like plasmas with B_t=2.0–2.1 T and I_p = 1.8 MA. A lower plasma internal inductance of $\ell_i \sim 0.7$ (and thus lower no-wall β_N limit) was produced using early neutral beam injection and a fast positive current ramp during beam injection in an H–mode plasma. Preliminary analysis shows a slowly rotating (25 Hz) $n = 1$ mode growing in a 40 ms time scale just before a β collapse, similar to what was observed in Ref. 2. The results of detailed stability studies using ideal (GATO) and resistive (MARS) MHD codes will be presented.

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[2]E.J. Strait, *et al.*, *Phys. Rev. Lett.* **74**, 2483 (1995).

☐ Prefer Oral Session
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