Abstract Submitted
for the DPP99 Meeting of
The American Physical Society

Sorting Category: 5.1.1.2 (Experimental)

Stabilization of Resistive Wall Modes by Plasma Rotation[1] E.J. STRAIT, R.J. LA HAYE, J.T. SCOVILLE, A.D. TURNBULL, General Atomics, A.M. GAROFALO, G.A. NAVRATIL, Columbia University, E.D. FREDRICKSON, L.C. JOHNSON, M. OKABAYASHI, Princeton Plasma Physics Laboratory, M. GRYAZNEVICH, UKAEA Fusion, E.A. LAZARUS, Oak Ridge National Laboratory — Slowly rotating resistive wall modes (RWMs) are often observed in DIII–D plasmas which exceed the ideal MHD beta limit calculated without a wall. Theory predicts that sufficiently large plasma rotation in the presence of a resistive wall should stabilize the RWM. Improved stability is found with the broader roation profile obtained by reducing the beam voltage at constant power. Recent counter-injection experiments should help determine which velocity is relevant for stabilization, by separating the diamagnetic and $E \times B$ contributions to the fluid rotation. Slowing of plasma rotation is often observed above the no-wall stability limit, and could be consistent with magnetic braking by field errors or small-amplitude RWMs. If the slowing cannot be avoided, active feedback stabilization will be required.

[1]Supported by U.S. DOE Contracts DE-AC03-99ER54463, DE-AC02-76CH03073, and DE-AC05-96OR22464, and Grant DE-FG02-89ER53297.

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☐ Prefer Oral Session
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Special instructions: DIII-D Poster Session 1, immediately following CL Hsieh

Date printed: July 16, 1999 Electronic form version 1.4