

Abstract Submitted
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Sorting Category: 5.1.1.2 (experimental)

Development of Tools for Resistive Wall Mode Feedback Control on DIII-D¹ J.T. SCOVILLE, R.J. LA HAYE, E.J. STRAIT, M.L. WALKER, General Atomics, E. FREDRICKSON, Princeton Plasma Physics Laboratory, J. BIALEK, A.M. GAROFALO, Columbia University — Diagnostic saddle loops have been installed on the DIII-D tokamak for measurement of the $n = 1$ radial magnetic field associated with the Resistive Wall Mode (RWM). The six loops are each located inboard from a corresponding section of the “C-coil,” which can produce an $n = 1$ radial field at the outboard midplane. The C-coil field can be used to oppose the slowly varying field from the RWM which penetrates the vacuum vessel. The interaction of the C-coil field with the vessel was characterized by producing an $n = 1$ ac field in vacuum for a range of frequencies from dc to 200 Hz. The response of the external saddle coils and the internal magnetic diagnostics was fit to a multiple eigenmode model and compared to the predictions of the SPARK code. A typical solution superimposes two eigenmodes with time constants of about 7 ms and 1 ms. We present a description of the saddle coil detector and C-coil system, the vacuum ac response measurements, and preliminary results from open loop experiments with plasma.

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- Prefer Oral Session
 Prefer Poster Session

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Special instructions: DIII-D Poster Session I (transport, turbulence, & stability), immediately following Comer

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