

Abstract Submitted
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Modeling and Design of a Resistive Wall Mode Stabilization System With Internal Field Coils in DIII-D¹ G.L. JACKSON, A.G. KELLMAN, P.M. ANDERSON, R.J. LA HAYE, A. NEREM, J.T. SCOVILLE, E.J. STRAIT, General Atomics, G.A. NAVRATIL, J. BIALEK, A.M. GAROFALO, H. REIMERDES, Columbia U., R. HATCHER, L.C. JOHNSON, M. OKABAYASHI, PPPL — Stabilization of n=1 resistive wall modes (RWMs) can allow stability at values of β_N above the resistive wall limit. A set of 12 internal coils is being installed in DIII-D, allowing fast feedback stabilization (~ 1 ms) of RWMs even when toroidal rotation is too slow to adequately stabilize these modes. VALEN3D modeling has shown that the growth rate of the RWM can be reduced to zero for values of β_N almost up to the ideal-wall limit using the internal coil, power, and feedback systems being constructed for operation in 2003. We will show the calculated toroidal mode spectrum of these new internal coils and discuss the various ways in which they can be interconnected for suppression of n=1 or n=2 RWM. Other uses of these coils, such as MHD spectroscopy or n=1 error field correction will also be presented. Currently two prototype internal coils have been installed and we will discuss their operation.

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Prefer Oral Session
 Prefer Poster Session

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