

Abstract Submitted
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RWM Feedback Simulations for ITER with Noise O. KATSURO-HOPKINS, J. BIALEK, G.A. NAVRATIL, Columbia University — Sensor noise in resistive wall mode (RWM) feedback systems is an important factor in determining feedback power requirements and system performance limits. The VALEN RWM control model has been used to simulate these effects for ITER, based on the results of DIII-D time dependent simulations. The noise in magnetic field sensor coils for ITER was modeled based on observed experimental noise amplitude and measured power spectra for the DIII-D experiment with appropriate scaling coefficient. Because the ITER feedback system includes both derivative and proportional gains, VALEN was modified to add noise to the measured values of sensors voltage and flux. Presence of noise in the derivative feedback requires filtering in order to achieve reasonable limits of control coil voltages. High frequency cut off, feedback system voltage limits and Kalman filters were investigated.

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