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Investigation of Magnetic Braking of Plasma Rotation by Applied Magnetic Field Perturbations,* S.A. Driskill, U. Virginia, E.J. Strait, R.J. La Haye, G.L. Jackson, *General Atomics,* H.~Reimerdes, *Columbia U.* – Stabilization of resistive wall modes (RWM) has been addressed by two methods: rotational stabilization and active feedback stabilization. It has been predicted that the rotational velocity of the ITER plasma will be insufficient to counteract the RWM through rotational stabilization alone. To study active feedback stabilization in current tokamaks such as DIII-D, the plasma rotation must be slowed to below the critical velocity threshold. In the absence of bi-directional neutral beam injectors, this is done by applying an external torque to the system, known as magnetic braking. The effects of magnetic braking on toroidal rotation are investigated using non-axisymmetric coils, capable of producing toroidal mode numbers n=1, 2, or 3. The relation of the rotation drag to the strength, the poloidal mode spectrum, and the configuration of the applied field are analyzed. Finally, the results are compared to both resonant and non-resonant braking models.

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[ ] Oral [x] Poster