

Abstract Submitted  
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**Plasma Braking Due to External Magnetic Perturbations** L. FRASSINETTI, KEJO OLOFSSON, P.R. BRUNSELL, M.W.M. KHAN, J.R. DRAKE, Division of Fusion Plasma Physics, Association EURATOM-VR, School of Electrical Engineering, Royal Institute of Technology KTH, Sweden — The RFP EXTRAP T2R is equipped with a comprehensive active feedback system (128 active saddle coils in the full-coverage array) and active control of both resonant and non-resonant MHD modes has been demonstrated. The feedback algorithms, based on modern control methodology such as reference mode tracking (both amplitude and phase), are a useful tool to improve the “state of the art” of the MHD mode control. But this tool can be used also to improve the understanding and the characterization of other phenomena such as the ELM mitigation with a resonant magnetic perturbation or the plasma viscosity. The present work studies plasma and mode braking due to static RMPs. Results show that a static RMP produces a global braking of the flow profile. The study of the effect of RMPs characterized by different helicities will also give information on the plasma viscosity profile. Experimental results are finally compared to theoretical models.

James R. Drake  
Division of Fusion Plasma Physics, Association EURATOM-VR,  
School of Electrical Engineering, Royal Inst. of Technology KTH, Sweden

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