

Abstract Submitted
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Understanding RWM Dynamics using a D_α Detector¹ R. JAMES, US Coast Guard Academy/Stevens Institute of Technology, K. BECKER, Polytechnic University / Stevens Institute of Technology, B. DEBONO, J. HANSON, J. LEVESQUE, D.A. MAURER, M.E. MAUEL, G.A. NAVRATIL, T.S. PEDERSEN, D. SHIRAKI, Columbia University — The dissipation mechanism responsible for rotational stabilization of the resistive wall kink mode (RWM) continues to be an object of intense research. On HBT-EP, there is evidence that edge neutral damping is a dissipation mechanism affecting tearing mode behavior [1]. Neutral damping effects on RWMs could also be responsible for dissipation observed during HBT-EP MHD spectroscopy experiments. To quantify these observed effects, we have installed a 20-channel linear photo-detector array to measure D_α emission and fluctuations. Qualitative observations of neutral effects on the RWM plus use of the detector and kinetic transport model [2] to measure kink mode radial structure will be reported with a summary of efforts to quantify the contribution of neutral damping on RWM rotational stabilization. [1] E. D. Taylor, *et al.*, *Phys. Plasmas* **9**, 3938 (2002), [2] B. LaBombard, MIT PSFC RR-00-9, (2000).

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