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ExB Rotation of Magnetohydrodynamic Modes Induced by a Biased Electrode D.A. MAURER, B. DEBONO, J.M. HANSON, R. JAMES, J.P. LEVESQUE, M.E. MAUEL, G.A. NAVRATIL, T.S. PEDERSEN, D. SHIRAKI, Columbia University — The effect of plasma rotation on the behavior of MHD modes is a topic of importance for both resistive wall and tearing mode stability and their effect on the performance of present and future magnetic fusion devices. On HBT-EP, a biased molybdenum electrode inserted into the edge plasma is used to change the intrinsic ExB rotation of MHD activity of both kink and tearing mode fluctuations. It has been possible to slow MHD mode rotation to near zero rotation frequency using this technique. For large applied bias voltage, MHD is observed to accelerate in the direction opposite to the naturally occurring mode rotation with frequencies up to two or three times the natural rotation rate. Measurements will be presented using a newly installed Triple/Mach probe array, 16 chord D_α emission detector, and high density 20 element Hall magnetic field sensor array to characterize the plasma and MHD fluctuations during bias probe induced mode rotation changes. *Supported by U.S. DOE Grant DE-FG02-86ER53222

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