

Abstract Submitted
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Measurement and Interpretation of MHD Instabilities in HBT-EP with NIMROD B. LI, P.J. BYRNE, B. DEBONO, J.P. LEVESQUE, M.E. MAUEL, D.A. MAURER, G.A. NAVRATIL, N. RATH, D. SHIRAKI, Columbia University — The newly installed fully instrumented control wall in the HBT-EP tokamak has more than 200 high-speed magnetic sensors enabling unprecedented coverage for the measurement of both the linear and nonlinear evolution of tokamak MHD instabilities. This poster presents progress and plans for the detailed validation of the NIMROD code [1] to pressure and current-driven instabilities in HBT-EP. First steps include parameterization of the time evolution of external and internal kink instabilities in model HBT-EP equilibria that show the spatial structures of instabilities having growth rates comparable to experimental observations. We also discuss future plans for the study of the nonlinear evolution of observed instabilities in time-evolving equilibria, comparison of simulation mode structure with observations, and the use of models for the conducting wall surrounding HBT-EP plasmas. Supported by US DOE Grant: DE-FG02-86ER53222

[1] C.R. Sovinec, et al., J. Comp. Phys., 195, 355 (2004).

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