

Abstract Submitted  
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**Analysis of TBM Error Fields with IPEC** JONG-KYU PARK, JONATHAN MENARD, Princeton Plasma Physics Laboratory, MICHAEL SCHAFFER, General Atomics, HOLGER REIMERDES, Columbia University, TBM INTERNATIONAL TEAM — The DIII-D mock-up coils for ITER Test Blanket Modules (TBMs) produce highly localized error fields. The TBM mock-up fields caused Neoclassical Toroidal Viscosity (NTV) damping of toroidal rotation, as expected from their non-resonant nature. However, the TBM mock-up fields also caused direct resonant plasma locking. The plasma locking could be mitigated by  $n=1$  error-field correction consistent with predictions by Ideal Perturbed Equilibrium Code (IPEC). This extreme case demonstrates that the control of the dominant error field is indeed central in error field corrections. In addition, generalized NTV analysis with IPEC showed that the damping in both the core and the edge can be explained by low and high toroidal harmonic perturbations, respectively. This indicates that the control of the dominant error field may also be able to mitigate NTV damping, and remains as an important future experiment. This work was supported by the US DOE Contract #DE-AC02-09CH11466 and #DE-FC02-04ER54682.

Jong-Kyu Park  
PPPL

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