NIMROD Modeling of the Compact Toroidal Hybrid (CTH)\(^1\) J.D. HEBERT, J.D. HANSON, S.F. KNOWLTON, D.A. MAURER, Auburn University, M.G. SCHLUTT, C.C. HEGNA, University of Wisconsin-Madison, S.E. KRUGER, Tech-X Corporation — The 3D extended MHD code NIMROD [1] has been modified to model the non-axisymmetric vacuum fields of the Compact Toroidal Hybrid (CTH) torsatron. Previous results [2] have shown good agreement between modeled and experimental vacuum fields as well as the formation and growth of island structures in discharges with driven current at zero \(\beta\) and constant conductivity. Modeling of current-driven discharges with self consistent Ohmic heating and finite \(\beta\) will be presented. A new post-processor to calculate the expected signals from experimental diagnostics using NIMROD simulation data is under development. Preliminary comparisons using magnetic diagnostic data from CTH will be shown.


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