

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Model Development for VDE Computations in NIMROD¹ K. J. BUNKERS, C. R. SOVINEC, Univ of Wisconsin, Madison — Vertical displacement events (VDEs) and the disruptions associated with them have potential for causing considerable physical damage to ITER and other tokamak experiments. We report on simulations of generic axisymmetric VDEs and a vertically unstable case from Alcator C-MOD using the NIMROD code [Sovinec, *et. al.*, JCP **195**, 355 (2004)]. Previous calculations have been done with closures for heat flux and viscous stress. Initial calculations show that halo current width is dependent on temperature boundary conditions, and so transport together with plasma-surface interaction may play a role in determining halo currents in experiments. The behavior of VDEs with Braginskii thermal conductivity and viscosity closures and Spitzer-like resistivity are investigated for both the generic axisymmetric VDE case and the C-MOD case.

¹This effort is supported by the U.S. Dept. of Energy, award numbers DE-FG02-06ER54850 and DE-FC02-08ER54975.

Kyle Bunkers
Univ of Wisconsin, Madison

Date submitted: 12 Jul 2017

Electronic form version 1.4