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MHD Simulations of Disruptions in NSTX J.A. BRESLAU, Princeton Plasma Physics Laboratory, H.R. STRAUSS, HRS Fusion, West Orange, NJ, R. PACCAGNELLA, Consorzio RFX, Padua, S.C. JARDIN, Princeton Plasma Physics Laboratory — Research tokamaks such as ITER must be designed to tolerate a limited number of disruptions without sustaining significant damage. It is therefore vital to have numerical tools that can accurately predict the effects of these events. The 3D nonlinear extended MHD code M3D [1] has been augmented with models of the vacuum/halo region and a thin axisymmetric resistive shell that allow it to simulate disruptions and calculate the associated wall currents and forces [2]. Its reliability, however, must be assessed with careful validation studies against disruption databases from existing experiments. Here we compare M3D VDE/kink disruption calculations with data from NSTX. The results of high-resolution numerical simulations at realistic Lundquist numbers show reasonable agreement with experimental data and provide confidence that M3D will be a useful tool for future ITER calculations. The effects of different choices of plasma outflow boundary conditions will also be reported.

[1] W. Park, *et al., Phys. Plasmas* **6** (1999) 1796.
[2] H.R. Strauss, *et al., Phys. Plasmas* **17** (2010) 082505.

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