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3D MHD disruptions simulations of tokamaks plasmas ROBERTO PACCAGNELLA, HANK STRAUSS, JOSHUA BRESLAU, Consorzio RFX and CNR — Tokamaks Vertical Displacement Events (VDEs) and disruptions simulations in toroidal geometry by means of a single fluid visco-resistive magneto-hydrodynamic (MHD) model are presented in this paper. The plasma model, implemented in the M3D code [1], is completed with the presence of a 2D homogeneous wall with finite resistivity. This allows the study of the relatively slowly growing magneto-hydro-dynamical perturbation, the resistive wall mode (RWM), which is, in this work, the main drive of the disruptions. Amplitudes and asymmetries of the halo currents pattern at the wall are also calculated and comparisons with tokamak experimental databases and predictions for ITER are given. [1] W. Park, E.V. Belova, G.Y. Fu, X.Z. Tang, H.R. Strauss, L.E. Sugiyama, Phys. Plasmas 6 (1999) 1796.

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