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Wall force produced during disruptions[1] H. STRAUSS, HRS Fusion, R. PACCAGNELLA, Consorzio RFX and Istituto Gas Ionizzati del C.N.R, J. BRESLAU, PPPL — The study of disruptions is of great importance for ITER. Previous work on disruptions [1] is extended to compute toroidally asymmetric wall force in ITER, using the M3D code. The disruptions are produced by n = 1 resistive wall modes or external kink modes. A thin wall resistive boundary model is used to calculate the wall forces. The symmetric wall force, produced by a VDE, and the asymmetric wall force, produced by n = 1 modes, are comparable in magnitude. It is found that the asymmetric and axisymmetric forces scale with the growth rate of the instability multiplied by the square of the current divided by magnetic field. A similar scaling was reported for VDEs in JET [2]. Numerically, the study of disruptions is very challenging. In the M3D extended MHD code, dealiasing was applied in the toroidal direction. Advection terms were treated with a numerical upwind method. These techniques provided sufficient numerical stability to simulate entire disruption events.

[1] R. Paccagnella, H. R. Strauss, and J. Breslau, Nucl. Fusion (2009) **49** 035003.
[2] V. Riccardo, T. C. Hender, P. J. Lomas, *et al.,* Plasma Phys. Control. Fusion (2004)

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