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**A multi-machine analysis of non-axisymmetric and rotating halo currents**[1] CLAYTON E. MYERS, S.P. GERHARDT, Princeton Plasma Physics Laboratory, N.W. EIDIETIS, General Atomics, R.S. GRANETZ, MIT Plasma Science and Fusion Center, G. PAUTASSO, Max-Planck-Institüt für Plasmaphysik, ITPA WORKING GROUP ON NON-AXISYMMETRIC HALO CURRENTS COLLABORATION — Halo currents measured during tokamak disruptions exhibit non-axisymmetric and rotating features in several machines including Alcator C-Mod,[2] ASDEX Upgrade,[3] and NSTX.[4] Such non-axisymmetries are of great interest to ITER because they can increase mechanical stresses during a disruption, especially if the rotation resonates with the natural frequencies of the vessel.[5] This paper presents an ITPA-initiated multi-machine analysis of these phenomena. The ITPA non-axisymmetric halo current database presently includes data from NSTX, DIII-D, AUG, and C-Mod. These data are analyzed here within a common numerical framework. Emphasis is placed on the evolution of the $n = 1$ component of the halo current over the course of the disruption, as well as on how the non-axisymmetries and rotation depend on the equilibrium plasma parameters at the start of the disruption.

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[2]Granetz et al., *Nucl. Fusion* **36**, 545 (1996)
[3]Pautasso, et al., *Nucl. Fusion* **51**, 043010 (2011)
[4]Gerhardt, *Nucl. Fusion* **53**, 023005 (2013)
[5]Hender et al., *Nucl. Fusion* **47**, S128 (2007)

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