

Abstract Submitted
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Compact Toroidal Hybrid Progress and Plans¹ D A MAURER, N ALLEN, D A ENNIS, G J HARTWELL, C JOHNSON, J KRING, P TRAVERSO, E WILLIAMSON, Auburn University — The Compact Toroidal Hybrid (CTH) is a torsatron/tokamak hybrid with the ability to vary the confining magnetic field configuration and generate rotational transform profiles that are tokamak-like with ohmically driven plasma current for disruption and MHD studies. The main goals of the CTH experiment are to study disruptive behavior as a function of the applied 3D magnetic shaping, and to test and advance the V3FIT reconstruction code and NIMROD modeling of CTH. Past and recent disruption studies will be overviewed and their relevance to tokamaks and quasi-axisymmetric stellarators will be discussed. Ongoing diagnostic development for the experiment includes an upgrade to an interferometer, development of new bolometer arrays, new spectroscopic studies, and coherence imaging of plasma flows. CTH also serves as a test bed for diagnostic development for our collaborations on the larger facilities like DIII-D and W7-X. These facility collaborations will be briefly summarized along with a new research direction to explore low temperature plasmas on magnetic surfaces.

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