

Abstract Submitted  
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**Interaction of Accelerated Compact Toroid with External Magnetic Fields** D.Q. HWANG, S.J. HOWARD, R.D. HORTON, S.E. BROCKINGTON, R.W. EVANS, R. KLAUSER, UC Davis, D. BUCHENAUER, W.M. CLIFT, Sandia National Lab — The potential use of accelerated compact toroids (SCT) to fuel magnetically confined fusion devices requires a clear understanding of the CT interaction with external magnetic fields. Previous experiment using simple probe diagnostics has illuminate the interaction physics [1]. With an array of new diagnostics, we will perform more detailed measurements of the interaction. With the new fast 2-D optical camera, the interaction in the target chamber can be systematically studied. The newly developed deflectometer can differentiate the effects on the main CT plasma versus the trailing plasma following the main CT. It is expected the external magnetic field will affect the magnetized CT differently than the unmagnetized trailing plasma. In addition the effect of the external magnetic field on the impurity ion in the CT will be studies using particle collection probes. In addition the oriental of the external field may tilt stabilize the CT after its detachment from the acceleration electrodes. \*This work supported by U.S. DOE Grant DE-FG02-03ER54732.

[1] D.Q. Hwang, H.S. McLean, K.L. Baker, R.W. Evans, R.D. Horton, S.D. Terry, S. Howard, G.L. Schmidt, Nuclear Fusion, Vol. 40, No. 5, pg 897 (2000)

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