Abstract Submitted
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Design and implementation of a Thomson scattering diagnostic for the Compact Toroidal Hybrid[1] P.J. TRAVERSO, D.A. MAURER, G.J. HARTWELL, S.F. KNOWLTON, M.C. ARCHMILLER, M.M. GOFORTH, Auburn University — The Compact Toroidal Hybrid (CTH) experiment is investigating the avoidance of disruptions in ohmically driven torsaton plasmas as the ratio of vacuum transform to the total transform is changed. To better characterize these plasmas under this wide range of magnetic configurations, a new Thomson scattering diagnostic is being implemented to measure electron temperature and density profiles. These important internal profile measurements will be incorporated into the V3FIT code [1] to enable better 3D equilibrium reconstruction. The Thomson scattering system uses a frequency doubled Continuum PL DLS 2 J Nd:YaG laser [2]. The incident beam is passed vertically through an entrance Brewster window and a baffle system to minimize stray laser light. The beam exits through another Brewster window to an external beam dump. Polarization optics are planned to maximize the scattered light directed to the collection system for the specific scattering geometry of CTH.

[1] J. D. Hanson, et al., Nucl. Fusion, 49 (2009) 075031
[2] D. J. Schlossberg, et al., Rev. Sci. Instr. 82, 10, 10E335

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