

Abstract Submitted  
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**Overview of the C-2W Field-Reversed Configuration Experiment**

**Diagnostic Suite** MATTHEW THOMPSON, TANIA SCHINDLER, HIROSHI GOTA, SERGEI PUTVINSKI, MICHEL TUSZEWSKI, MICHL BINDERBAUER, Tri Alpha Energy, TAE, TRI ALPHA ENERGY, INC. TEAM — Tri Alpha Energy (TAE) studies the evolution of advanced beam-driven field-reversed configuration (FRC) plasmas sustained by neutral-beam injection. Operations recently commenced on the C-2W device, which focuses on FRC heating and diamagnetic current build up [1]. Data on the FRC plasma is provided by an initial suite of diagnostics including magnetic sensors, interferometry, fast imaging cameras, Thomson scattering, and spectroscopy. Many more sophisticated diagnostics are also in preparation and commissioning: reflectometry, neutral particle analyzers, multi-chord FIR polarimetry, end loss analyzers, impurity and majority ion CHERS, FIDA, and 100 channel bolometers with proprietary compact local data acquisition. While many of these diagnostic systems were first implemented for the earlier C-2 and C-2U experiments [2], most had major upgrades for C-2W. TAE's diagnostics development program also works on novel systems including new ways to measure FRC internal magnetic fields. [1] M.W. Binderbauer et al., AIP Conf. Proc. 1721, 030003 (2016) [2] M.C. Thompson et al., Rev. Sci. Instrum. 87, 11D435 (2016)

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