

This poster by Gota will be the first one and followed by others as listed above.

Abstract Submitted
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Overview of C-2W Field-Reversed Configuration Experimental Program H. GOTA, M.W. BINDERBAUER, T. TAJIMA, S. PUTVINSKI, M. TUSZEWSKI, S. DETTRICK, S. KOREPANOV, J. ROMERO, A. SMIRNOV, Y. SONG, M.C. THOMPSON, A. VAN DRIE, X. YANG, THE TAE TEAM, Tri Alpha Energy, Inc., A.A. IVANOV, BINP — Tri Alpha Energy’s research has been devoted to producing a high temperature, stable, long-lived field-reversed configuration (FRC) plasma state by neutral-beam injection (NBI) and edge biasing/control. C-2U experiments have demonstrated drastic improvements in particle and energy confinement properties of FRC’s, and the plasma performance obtained via ~10 MW NBI has achieved plasma sustainment of up to 5 ms and plasma (diamagnetism) lifetimes of 10+ ms [1]. The emerging confinement scaling, whereby electron energy confinement time is proportional to a positive power of the electron temperature, is very attractive for higher energy plasma confinement; accordingly, verification of the observed T_e scaling law will be a key future research objective. The new experimental device, C-2W (now also called “Norman”), has the following key subsystem upgrades from C-2U: (i) higher injected power, optimum energies, and extended pulse duration of the NBI system; (ii) installation of inner divertors with upgraded edge-biasing systems; (iii) fast external equilibrium/mirror-coil current ramp-up capability; and (iv) installation of trim/saddle coils for active feedback control of the FRC plasma. This paper will review highlights of the C-2W program.

[1] M.W. Binderbauer *et al.*, AIP Conf. Proc. **1721**, 030003 (2016).

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