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Recent Achievements in the C-2W Field-Reversed Configuration Experiment HIROSHI GOTA, ARTEM SMIRNOV, MICHL BINDERBAUER, TOSHIKI TAJIMA, SERGEI PUTVINSKI, MICHEL TUSZEWSKI, SEAN DETTRICK, THOMAS ROCHE, ERIK TRASK, PETER YUSHMANOV, AND THE TAE TEAM, TAE Technologies, Inc. — TAE Technologies, Inc. (TAE) is a privately funded company pursuing an alternative approach to magnetic confinement fusion, which relies on field-reversed configuration (FRC) plasmas composed of mostly energetic and stable particles. TAE's current experimental device, C-2W (also called "Norman") [1], is the world's largest compact toroid device which has the following key features: neutral beam injection with high power (up to 20 MW) and intra-discharge variable energy (15–40 keV) functionality; flexible edge-biasing systems in both inner and outer divertors; external magnetic field fast control capabilities, such as ramp-up, and active feedback control of the FRC plasma. In C-2W, record breaking, advanced beam-driven FRC plasmas dominated by fast particles (total $T_e + T_i$ up to 3 keV, based on a pressure balance) are produced and sustained in steady state (up to 30 ms, limited by the energy storage). Dedicated experimental campaigns have been conducted to further optimize and improve performance and characterize the plasma. This paper will review the highlights of the C-2W experimental program as well as the newly obtained high-performance operating regime.

[1] H. Gota *et al.*, Nucl. Fusion **59**, 112009 (2019).

Hiroshi Gota
Tri Alpha Energy, Inc.

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