

Abstract Submitted  
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**Rigid Rotor Profiles for a Field-Reversed Configuration** FRANK WESSEL, Tri Alpha Energy, Inc., HAFIZ RAHMAN, University of California, Irvine, FABIO CONTI, University of Pisa, ARTAN QERUSHI, MARK MOREHOUSE, NATHAN BOLTE, Tri Alpha Energy, Inc., FRANCESCO GIAMMANCO, University of Pisa, THOMAS ROCHE, Tri Alpha Energy, Inc. — The radial profiles for a Field-Reversed Configuration (FRC) are measured and compared to predictions of the Rigid Rotor (RR) Model, a time-independent, analytic description for the FRC equilibrium.<sup>1</sup> Injectors mounted on both ends of the confinement section create a plasma pre-fill in the vacuum chamber. A coaxial-coil system, two coils, one inside the plasma and another outside, accelerates the plasma producing a FRC. Diagnostics measure the plasma density, magnetic-field, and electric-field profiles,  $n(r)$ ,  $B_z(r)$ , and  $E_r(r)$ . The measured profiles agree with the 1-D RR model predictions, supporting the validity of this model as a basis for describing this specific start-up configuration for the FRC.

<sup>1</sup>N. Rostoker and A. Qerushi, Phys Plasmas 9(7), p.3057(2002).

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