Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Study of micro-bursts in C-2U[**1**] B.H. DENG, MICHAEL BEALL, MICHAEL BINDERBAUER, RYAN CLARY, JON DOUGLASS, HIROSHI GOTA, SERGEY KOREPANOV, RICHARD MAGEE, SERGEI PUTVINSKI, THOMAS ROCHE, MATTHEW THOMPSON, MICHEL TUSZEWSKI, Tri Alpha Energy, Inc., THE TAE TEAM — Sustainment of advanced beam-driven FRCs has recently been achieved in C-2U. In typical discharges periodic small amplitude bursts are observed with down chirping in the diamagnetic frequency range. A recently developed state-of-the-art FIR diagnostic allows to resolve details of these events, which exhibit n=2 mode structure and are possibly of the interchange type, which is intrinsic to FRC plasmas. The bursts are also a manifestation of the abundant trapped fast ions in the system. More detailed understanding of these events can help the design of next generation FRC experiments. For this purpose, a possible drive mechanism is proposed and a chirplet model is developed to characterize the dynamic behavior of these bursts. The interaction between bursts and equilibrium profile dynamics will be analyzed from data measured by interferometers, bolometer arrays, and magnetic diagnostics. The effect of externally applied ExB shear will also be studied, as will be possible fast ion losses as seen by fast ion diagnostics.

[1] M. Binderbauer *et al.*, Physics of Plasmas, 22, 056110 (2015)

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Date submitted: 24 Jul 2015 Electronic form version 1.4