

Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Results from E||B Neutral Particle Analyzer and Calibration Ion Beam System on C-2U RYAN CLARY, Tri Alpha Energy, A ROQUEMORE, Princeton Plasma Physics Laboratory, A KOLMOGOROV, A IVANOV, Budker Institute of Nuclear Physics, S KOREPANOV, R MAGEE, Tri Alpha Energy, S MEDLEY, Princeton Plasma Physics Laboratory, A SMIRNOV, Tri Alpha Energy, M TIUNOV, Budker Institute of Nuclear Physics, TAE TEAM — C-2U is a high-confinement, advanced beam driven FRC which aims to sustain the configuration for > 5 ms, in excess of typical MHD and fast particle instability times, as well as fast particle slowing down times¹. Fast particle dynamics are critical to C-2U performance and several diagnostics have been deployed to characterize the fast particle population, including neutron and proton detectors, an electrostatic neutral particle analyzer, and neutral particle bolometers. To increase our understanding of fast particle behavior and supplement existing diagnostics an E||B NPA² was acquired from PPPL which simultaneously measures H⁰ and D⁰ flux between 2 and 22 keV with high energy resolution. In addition, a small, high purity, ion beam system has been constructed and tested to calibrate absolutely fast particle detectors. Here we report results of measurements from the E||B analyzer on C-2U and inferred fast particle behavior, as well as the status of the calibration ion beam system.

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

²S. S. Medley and A. Roquemore, **Review of Scientific Instruments** 75, 3625 (2004)

Ryan Clary
Tri Alpha Energy

Date submitted: 24 Jul 2015

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