

Abstract Submitted  
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**Fast-ion Characteristics in Colliding FRCs with Neutral Beam Injection** RYAN CLARY, ARTEM SMIRNOV, SERGEY KOREPANOV, SEAN DETTRICK, Tri Alpha Energy, TAE TEAM TEAM — Tri Alpha Energy's C-2 device [1] aims to explore confinement properties of colliding Field-Reversed Configuration (FRC) plasmas, augmented with neutral beam injection. Naturally, it is desirable to understand the general characteristics of the resulting fast-ion population. For this purpose, several 16 channel silicone-based Neutral Particle Bolometers (NPB) have been designed and installed on the C-2 device, measuring charge-exchanged fast-neutrals originating from the fast-ion population. We present results illustrating the effects on fast-ions from wall recycling and from the  $n = 2$  rotation instability. In addition we find good agreement between NPB measurements and Monte Carlo simulations. The NPB diagnostics are a spatially resolved complement to the energy resolved Neutral Particle Analyzers installed on the C-2 device.

[1] M. W. Binderbauer *et al*, Phys. Rev. Lett., **105**, 045003 (2010)

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