

Abstract Submitted
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Formation performance and upgrade paths for the C-2 System

[1] E. TRASK, E. GARATE, R. MENDOZA, AND THE TAE TEAM — Tri Alpha Energy's C-2 experimental system is a linear device consisting of two separate multi-coil theta-pinch formation sections and a central confinement vessel. Two high-beta compact toroids (CTs) are formed by sequential firing of the main reversal coils in the formation sections. Field-reversed configurations (FRCs) are formed by the dynamic collision of the two CTs. The performance of the machine formation sections has been well quantified, with observed flux trapping efficiencies up to 60% and energy conversion efficiencies up to 10%. Strong correlations between formation efficiencies and global FRC performance are observed. Data will be presented showing the correlations between the various formation efficiencies and FRC parameters such as confinement times. Due to the flexibility of control for each formation section, several different formation methods that may increase the efficiency of energy delivery to the plasma will also be discussed. [1] M. W. Binderbauer *et al*, Phys.Rev.Lett. **105**, 045003 (2010).

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