

Abstract Submitted  
for the DPP14 Meeting of  
The American Physical Society

**Simulation of Neutral Beam current drive in C2 FRC Plasmas**

SANGEETA GUPTA, SEAN DETTRICK, DAN BARNES, TOSHIKI TAJIMA, ERIK TRASK, Tri Alpha Energy, TRI ALPHA ENERGY TEAM — Recently, improved high confinement regime is observed in C2 FRC plasma due to better wall conditions and higher formation magnetic field. In this regime, measured excluded flux increases in time and then decreases as the neutral beam coupling with FRC decreases. These plasmas were simulated using Quasi-1D (Q1D) plasma transport code using reduced parallel and perpendicular transport coefficients. In the simulations a reduced poloidal flux decay rate is observed in the presence of neutral beams. Numerical results showing comparison with experimentally observed excluded flux radius, line integrated electron density, electron and ion temperature will be presented.

Sangeeta Gupta  
Tri Alpha Energy Inc

Date submitted: 11 Jul 2014

Electronic form version 1.4