

Abstract Submitted  
for the DPP10 Meeting of  
The American Physical Society

**Field line mapping and equilibrium reconstructions in new CNT Configuration** PETER TRAVERSO, THOMAS PEDERSEN, PAUL BRENNER, XABIER SARASOLA, BENOIT DURAND DE GEVIGNEY, Columbia University — The Columbia Non-neutral Torus (CNT) has the useful feature of having adjustable coil geometry, creating up to three different stellarators each having a completely new shape to its magnetic surfaces and a different Iota profile. Recently the tilt angle between the two interlocking coils has been changed for the first time on CNT, allowing a study of the new magnetic geometry. In the new configuration field line mapping has been accomplished for multiple current ratios and magnetic fields to confirm the existence of good nested magnetic surfaces. At a specific current ratio a large one-three island chain is created. Plasma parameters have been measured with the new coil configuration, both in cases of a large internal island chain, and in cases without. Full 3D equilibrium reconstructions of potential and density are being performed using a modified version of the existing Poisson-Boltzmann solver. Field line mapping in this configuration will be presented, and a progress report on the equilibrium reconstructions will also be given.

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Date submitted: 15 Jul 2010

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