Abstract Submitted
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**Overview of recent results from non-neutral plasmas in the CNT stellarator**[1] T. SUNN PEDERSEN, A.H. BOOZER, P.W. BRENNER, B. DURAND DE GEVIGNEY, M.S. HAHN, X. SARASOLA, A. SENTER — An overview of recent results from the Columbia Non-neutral Torus (CNT) will be given. CNT is a stellarator dedicated to studies of non-neutral and electron-positron plasmas [1]. CNT operates with a surplus of electrons – most of the time with only a trace amount of ions (ni/ne <1%), creating negative space potentials of several hundred volts despite having Te ≈5 eV [2]. This allows the study of neoclassical confinement with negative radial electric fields much larger than those that would arise from ambipolarity constraints, and also allows the study of pure electron plasmas in a minimum energy state. The overview will include results from studies of partially neutralized plasmas [3-5], recent improvements in confinement times, observations of transport jumps [6] and will give an update on our plans for the creation and study of pure electron plasmas. [1] T. Sunn Pedersen and A. H. Boozer, PRL **88** (2002) 205002 [2] J. P. Kremer *et al.,* PRL **97**, (2006) 095003 [3] P. W. Brenner *et al.,* this poster session [4] Q. R. Marksteiner *et al.,* PRL **100** (2008) 065002 [5] X. Sarasola Martin *et al.,* this poster session [6] M. S. Hahn et al., Phys. Plasmas **16** (2009) 022105

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