

Abstract Submitted  
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**Initial characterization of electron cyclotron heated plasmas in the Columbia Non-Neutral Torus** KENNETH HAMMOND, FRANCESCO VOLPE, Columbia U., SAMUEL LAZERSON, PPPL — The Columbia Non-Neutral Torus (CNT) is a stellarator at Columbia University recently modified for the study of quasi-neutral plasmas heated by 2.45 GHz electron cyclotron waves. Using a simple configuration of four circular planar coils, it generates magnetic surfaces with the lowest aspect ratios (1.9-2.7) ever attained by a stellarator. The low magnetic field (0.09 T), combined with the possibility of electron Bernstein wave heating above the cutoff density, could make CNT suitable for research of magnetohydrodynamic equilibrium and stability at high beta. Additional plans for future work include novel microwave and magnetic diagnostics, heating with electron cyclotron and helicon waves, and error field studies. Here we present an experimental characterization of the parameters of CNT's first microwave-heated plasmas. We present Langmuir probe measurements of temperature and density profiles, fast camera images, and equilibrium reconstructions computed by the VMEC code.

Kenneth Hammond  
Columbia U.

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