

Abstract Submitted  
for the DPP09 Meeting of  
The American Physical Society

**Collisional-radiative modeling of EBIT spectra from highly-charged high-Z ions of relevance to magnetic fusion**<sup>1</sup> YURI RALCHENKO, ILIJA N. DRAGANIĆ, JOHN D. GILLASPY, JOSEPH READER, JOSEPH N. TAN, JOSHUA M. POMEROY, SAMUEL M. BREWER, NIST — Electron Beam Ion Traps (EBITs) are currently the primary source of spectroscopic information on highly-charged ions of heavy elements, e.g. tungsten, that are important for diagnostics of magnetic confinement fusion devices such as ITER. We will present some results on collisional-radiative (CR) modeling of low-density non-Maxwellian plasmas of EBITs and discuss how various physical processes affect spectral emission and ionization balance. Special attention will be given to the accuracy of radiative and collisional data used for the CR modeling. The simulated spectra will be compared with our recently measured x-ray and extreme-ultraviolet spectra of highly-charged (ion charge  $z=35-68$ ) Hf, Ta, W, and Au.

<sup>1</sup>Supported in part by the Office of Fusion Energy Sciences of the U.S. Department of Energy.

Yuri Ralchenko  
NIST

Date submitted: 20 Jul 2009

Electronic form version 1.4