

Abstract Submitted
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The Importance of Occupation Probability/Continuum Lowering in Hydrogen Line Profile Calculations¹ MICHAEL MONTGOMERY, PATRICIA CHO, BART DUNLAP, University of Texas at Austin, THOMAS GOMEZ, MARC-ANDRE SCHAEUBLE, Sandia National Laboratories, DON WINGET, University of Texas at Austin, WCAPP TEAM² — Whether the context is astrophysical or laboratory plasmas, fitting the lines in observed spectra with theoretical models is often the most easily-applied technique for constraining plasma conditions. To obtain reliable results, the important physical effects must be properly taken into account. One important effect that is relatively unconstrained experimentally is the continuum lowering/occupation probability of individual states. In this talk we show how fits to astrophysical and laboratory data are affected by different formalisms for the occupation probability. Using data from the White Dwarf Photosphere Experiment (WDPE) fielded at Sandia's Z-machine, we examine which configurations of our hydrogen gas cell are most effective for measuring this critical aspect of theory.

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²WCAPP = Wootton Center for Astrophysical Plasma Properties. This talk would be the 4th talk in that proposed session.

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