

Abstract Submitted
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Measurement of the Absolute Excitation Cross Section of the $3s^2\ ^2P^o - 3s^2\ ^2P_{3/2}$ transition in Fe^{13+} STEVEN SMITH, ARA CHUTJIAN, SABBIR HOSSAIN, Jet Propulsion Laboratory, SWARAJ TAYAL, Clark Atlanta University — Measurements have been made of the electron excitation cross section for highly-charged positive ions (HCIs). These ions and charge states are important in interpreting data obtained from the HST, EUVE, FUSE, Chandra and Newton missions. Experimental cross sections are reported for the $3s^2\ ^2P^o - 3s^2\ ^2P_{3/2}$ transition in Fe^{13+} at 2.34 eV. The JPL electron-cyclotron resonance ion source is utilized [1], along with the energy loss method, in a merged electron-ion beams geometry [2]. The center-of-mass interaction energies are in the range 1 eV (below threshold) to 6 eV. Clear resonance enhancement is observed in both experiment and theoretical results [3] near threshold for this $^2P^o - ^2P_{3/2}$ transition. Sabbir Hossain acknowledges support through the NASA-NRC program. This work was carried out at JPL/Caltech and supported by NASA. [1] J. B. Greenwood, S.J. Smith, A. Chutjian, and E. Pollack, Phys. Rev. A **59** 1348 (1999). [2] A. Chutjian, Physica Scripta **T110**, 203 (2004). [3] P.J. Storey, H.E. Mason, H.E. Saraph, Astron. Astrophys., **309**, 677 (1996).

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