

Abstract Submitted  
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**Ground and Excited State Cross Sections for Electron Impact on Cesium**<sup>1</sup> WILLIAM MCCONKEY, MICHAL LUKOMSKI, TIMOTHY REDDISH, SEAN SUTTON, WLADEK KEDZIERSKI, University of Windsor — We report some of the most interesting results of our ongoing [1,2] investigation of electron collisions with cesium atoms localized in a Magneto-Optical Trap (MOT). The trap loss technique used was pioneered by Lin and co-workers [e.g. 3], and does not require knowledge of the absolute target density. The choice of an appropriate pulsing scheme has enabled total cross sections for the ground (Cs  $6^2S_{1/2}$ ) and  $6^2P_{1/2}$  excited states to be determined. Furthermore, preliminary results of total ionization cross sections will also be presented. Our earlier studies [1] covered a 100-400eV energy range for the incident electrons. Recent significant modifications to the apparatus have resulted in a more efficient data acquisition rate and have enabled us to extend the energy range down to 5eV. This low energy capability is important as in this region the discrepancies with other experimental work and with theory become apparent.

- [1] J. A. MacAskill et al, J. Elect. Spect. and Rel. Phen., **123**, 173 (2002).
- [2] M Lukomski et al, J Phys B, **38**, (2005), Submitted.
- [3] R. S. Schappe et al, Europhys. Lett., **29**, 439, (1995).

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