

Abstract Submitted
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Inner shell excitation of Cu, Ag and Au ALLAN STAUFFER, York University, ROBERT MCEACHRAN, Australian National University — The ground states of Cu, Ag and Au have the configuration $nd^{10}(n+1)s$ with $n = 3, 4$ and 5 . The lowest excited manifold for Cu and Au has the configuration $nd^9(n+1)s^2$ which is well separated from the next excited manifold $nd^{10}(n+1)p$. However, for Ag, the lowest $4d^95s^2$ level with $J = 5/2$ lies between the two levels of the $4d^{10}5p$ manifold. In [1] we compared our Relativistic Distorted Wave calculations for the excitation of the $4d^{10}5p$ manifold with experimental measurements which would have included a contribution from the $4d^95s^2$ $J = 5/2$ level. While we do not expect the cross section for this forbidden transition to be large compared to the optical allowed transitions of the P levels, we decided to investigate excitation of these inner shell levels, in part because they are the lowest excited levels in Cu and Au, We will discuss the theoretical expressions for these excitations as well as give numerical results of our cross section calculations. [1] S. D. Tošić, V. Pejčev, D. Šević, R. P. McEachran, A. D. Stauffer, and B. P. Marinković, Phys. Rev. A **91**, 052703 (2015)

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