

Abstract Submitted
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Relativistic Configuration Interaction Calculations for the $J=3/2$, $5/2$ States of Mo VI¹ LIN PAN, Physics Department, Michigan Technological University, Houghton, MI 49931, DONALD R. BECK, Physics Department, Michigan Technological University, Houghton, MI 49931 — Relativistic configuration interaction calculations have been done for the $4p^5 4d^2$, nf ($n=4-6$) $J=5/2$ levels of Mo VI. The careful treatment of correlation is crucial to obtain accurate energy values. Besides, second-order effects and the magnetic Breit effects are also important, especially to the upper levels. There are only two measurements [1,2] for the $4p^5 4d^2$ levels to date. Our results are in good agreement with the most recent measurement [1] for the lower 9 levels of $4p^5 4d^2$. For the remaining 2 levels, the discrepancies are large ($> 3000 \text{ cm}^{-1}$). We have also calculated the oscillator strengths in both gauges for transitions $nd \rightarrow nf$, $4p^5 4d^2$ $J=5/2$. The average gauge agreement of those big transitions ($f > 0.01$) is 6.6% for ${}^2D_{3/2} \rightarrow J=5/2$, 5.0% for ${}^2D_{5/2} \rightarrow J=5/2$. [1] A. Kancerevicius, A. Ramonas, A. Riabcevas and S. Ciurilovas *Lithuanian Journal of Physics* **31**, 251 (1991) [2] A. Tauheed, K. Rahimullah and M. S. Z. Chaghtai *Phys. Rev. A* **32**, 237 (1985)

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