

Abstract Submitted
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Interchannel-Coupling-Induced Structure in Atomic Photoionization of Outer Shells Above Inner-Shell Thresholds DAVID KEATING, STEVEN MANSON, Georgia State University, PRANAWA DESHMUKH, Indian Institute of Technology-Tirupati. — Interchannel coupling is a very important contributor to the atomic photoionization cross section, especially in the cross sections of outer subshells near the thresholds of inner subshells where there is a discontinuity between the cross section below the opening of the threshold and just above the opening of the threshold [1]. To explore these discontinuities, a theoretical study of the photoionization cross sections of the noble gas atoms has been performed using the relativistic random phase approximation (RRPA) methodology [2]. In order to fully investigate the effects of interchannel coupling, calculations have been performed with and without interchannel coupling, which is possible within the framework of the RRPA methodology, allowing us to assess the importance of various levels of interchannel coupling. The results show significant effects in essentially all case, thereby demonstrating that threshold. [1] W. Drube et al, J. Phys. B 46, 245006 (2013); [2] W. R. Johnson and C. D. Lin, Phys. Rev. A 20, 964 (1979).

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