

Abstract Submitted
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Photoionization studies of Cd@C₆₀ ASHISH KUMAR, SINDHU KALYADAN, HARI R. VARMA, IIT-Mandi, PRANAWA C. DESHMUKH, IIT-Madras, STEVEN T. MANSON, Georgia State University — Atoms trapped in fullerene (A@C₆₀) cages have attracted considerable attention in the recent past owing to their importance in many areas of physics [1]. The additional potential due to the fullerene cage causes significant changes to atomic ionization probabilities by inducing confinement oscillations in the photoionization parameters [2]. The existence of such oscillations has been verified in a recent experiment [3]. These developments have motivated us to extend our studies of the effect of confinement on the photoionization process. We study the photoionization of Cd which is trapped inside a fullerene molecule (Cd@C₆₀) to understand the combined effect of confinement, correlation and relativistic effects on photoionization in such endohedral system. The fullerene potential is simulated by using a spherical shell model potential. In the present work, the Relativistic Random Phase approximation (RRPA) method is employed to determine the photoionization parameters [4].

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Steven T. Manson
Georgia State University

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