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Double Photoionization of Atomic Beryllium[1] FRANK L. YIP, Lawrence Berkeley Natioinal Laboratory, C. WILLIAM MCCURDY, U. C. Davis, THOMAS N. RESCIGNO, Lawrence Berkeley National Laboratory — One-photon double ionization (DPI) of beryllium represents the next step in the evolution of DPI investigations that began with helium in order to sensitively probe electron correlation. Beryllium is the simplest atomic species of the alkaline earth elements which, in general, possess two electrons outside of a fully occupied inner shell that spherically screens the nucleus. This provides a natural basis for comparison to $1s^2$ helium DPI. However, the valence state of beryllium has $n = 2$, thus making the valence excited target $2s2p$ more accessible relative to the $2s^2$ ground state as compared to ground-state and metastable helium. Also, the symmetry of photoionizing from either the ^1S or ^1P initial state will have consequences for the angular distributions for double ionization. Triply differential cross sections (TDCS) are presented for DPI from both ground state $2s^2$ and excited state $2s2p$ beryllium calculated using exterior complex scaling (ECS) for the valence electrons.

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