

Abstract Submitted  
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**Theoretical Study of the Photoionization of Be-like Ions** WEI-CHUN CHU, HSIAO-LING ZHOU, STEVEN T. MANSON, Georgia State University — The photoionization for a number of the ions of the Be-like isoelectronic sequence have been studied from the neutral to  $Z=26$  (Fe) using Breit-Pauli  $R$ -matrix program. The cross sections from  $1S_0^e$  ground state and  $3P_0^o$  metastable state were calculated up to  $1s^24f_{7/2}$  threshold of the three-electron final-state ion. The total cross sections for Be and  $B^+$  are in good agreement with recent measurements. The partial cross sections for the various channels are compared with earlier calculations. The various autoionizing resonances from ground and metastable states were identified and characterized (energy and width) with the QB program [1], and the overlapping of the resonance series is discussed and compared with earlier work. The evolution of the resonances and the nonresonant cross section along the isoelectronic sequence is delineated. This work was supported by DOE and NASA. All calculations were performed on the DOE NERSC system. [1] L. Quigley, K. Berrington, and J. Pelan, *Comput. Phys. Commun.* **114**, 225 (1998).

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