

Abstract Submitted  
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**Lifetimes and Oscillator Strengths for Ultraviolet Transitions in Ge II**<sup>1</sup> NEGAR HEIDARIAN, RICHARD E. IRVING, STEVEN R. FEDERMAN, DAVID G. ELLIS, SONG CHENG, LARRY J. CURTIS, Univ of Toledo — Better understanding of the atomic structure for atomic ions requires experimental measurements for lifetimes and oscillator strengths which also serve as a test for theoretical calculations. Furthermore, interpreting astronomical observations of atomic ions requires knowledge of their oscillator strengths and transition probabilities. We present the results of lifetime measurements with beam-foil techniques performed with the Toledo Heavy-Ion Accelerator on levels of interest in Ge II producing transitions to the ground term at 1237.1 Å and 1261.9 Å ( $4s^24d\ ^2D_{3/2}$  and  $4s^24d\ ^2D_{5/2}$ , respectively). Oscillator strengths are derived from the lifetimes, and our experimental results are compared with our MCDHF<sup>2</sup> calculations using the development version of the GRASP2K package<sup>3</sup> as well as the latest calculations done by others. We also provide an overall comparison of our studies on the  $ns^2nd\ ^2D$  and  $nsnp^2\ ^2D$  terms in three elements of group IV of the periodic table, namely Pb II, Sn II and Ge II.

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<sup>2</sup>P. Jönsson et al., The Computational Atomic Structure Group (2014)

<sup>3</sup>P. Jönsson et al., Comput. Phys. Commun. 184, 2197 (2013)

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