

Abstract Submitted
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Multiply-Charged Positive Ion Polarizabilities from Rydberg Ion Fine Structure¹ STEPHEN R. LUNDEEN, LAURA E. WRIGHT, ERICA L. SNOW, Dept. of Physics, Colorado State University — Experimental methods originally developed for study of fine structure patterns in high-L Rydberg states of neutral atoms and molecules have recently been extended to allow study of similar states in Rydberg states of multiply-charged ions[1]. Initial studies, carried out in Rydberg states of Si^+ and Si^{2+} , led to determination of the polarizabilities of Na-like and Mg-like Silicon ions [2,3], but similar studies may be feasible in a wide range of systems. Continued studies are aimed at studying ions with higher charge, such as the closed shell ion Kr^{6+} , and eventually the Radon-like ions U^{6+} and Th^{4+} . [1] S.R. Lundeen in *Advances in Atomic, Molecular and Optical Physics, Vol. 52*, edited by P.R. Berman and C.C. Lin, p. 161 [2] R.A. Komara, M.A. Gearba, S.R. Lundeen, C.W. Fehrenbach, Phys. Rev. A 67, 062502 (2003) [3] R.A. Komara, M.A. Gearba, C.W. Fehrenbach, and S.R. Lundeen, J. Phys. B, At. Mol. Opt. Phys. 28, 2787 (2005)

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