

Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Properties of multiply-charged Actinide Ions from Measurements of Rydberg Ion Fine Structure Patterns¹ STEPHEN LUNDEEN, JULIE KEELE, CHRIS SMITH, Colorado State University, CHARLES FEHRENBACH, Kansas State University — Multiply-charged actinide ions play a central role in actinide chemistry, but as highly relativistic many-electron systems their properties are difficult to predict from first principles. Experimental checks on these calculations are very sparse. One promising approach to determine the ion properties that control their long-range interactions is to attach a single non-penetrating Rydberg electron and measure the details of its binding to the ion of interest. This can be accomplished using the Resonant Excitation Stark Ionization Spectroscopy (RESIS) technique. The results of studies of the Rn-like and Fr-like ions of Th and U will be discussed.

¹Supported by the Chemical Sciences, Geosciences, and Biosciences Division of the Office of Basic Energy Sciences, Office of Science, U.S. Department of Energy.

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Date submitted: 25 Jan 2013

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