

Abstract Submitted
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Atomic properties of Ca^+ , Sr^+ , Cd^+ , Hg^+ , and Ra^+ DANSHA JIANG, M.S. SAFRONOVA, University of Delaware, U.I. SAFRONOVA, University of Nevada, Reno — We conducted a systematic study of the transition properties of Ca^+ , Sr^+ , Cd^+ , Hg^+ , and Ra^+ ions using a relativistic all-order method. Reduced electric-dipole matrix elements and transition rates are determined for the $ns - np_j$ and $np_j - n'd_j$ transitions, where ns is a ground state. The electric-quadrupole matrix elements are evaluated for the $ns - (n-1)d_j$ transitions in Sr^+ and Ra^+ . The theoretical lifetimes for the np_j and nd_j states are compared with latest available experimental measurements. The energy levels and hyperfine constants are also calculated and compared with experiment. This work is motivated by recent lifetime measurements in Ca^+ , Sr^+ , and Cd^+ .

Marianna Safronova
University of Delaware

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