

Abstract Submitted
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Properties of Rn-like Th^{4+} from microwave spectroscopy of high- L $n=37$ Rydberg states of Th^{3+1} CHRIS SMITH, JULIE KEELE, STEPHEN LUNDEEN, Colorado State University, CHARLES FEHRENBACH, Kansas State University — A recent microwave/RESIS study of $n=37$ Rydberg levels of Th^{3+} led to the first measurements of dipole and quadrupole polarizabilities of Rn-like Th^{4+} [1]. We report additional measurements that extend the data pattern to include the $L=8$ level and improve the precision of the $L = 14$ and $L = 15$ levels. Together these new measurements allow improved determinations of both polarizabilities and a more precise test of theoretical calculations [2].

[1] Julie A. Keele, S.R. Lundeen, and C.W. Fehrenbach, Phys. Rev. A 83, 062509 (2011)

[2] U.I Safronova and M.S. Safronova, Phys. Rev. A 84, 052515 (2011)

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