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Progress Towards Measurement of the Electron Electric Dipole Moment Using the PbF Molecule: Measurement of Hyperfine Splittings
POOPALASINGAM SIVAKUMAR, CHRISTOPHER MCRAVEN, MILINDA RUPASINGHE, NEIL SHAFER-RAY, University of Oklahoma — The lead monofluoride molecule provides for a 1000- to 10,000- fold improvement in sensitivity to an electron electric dipole moment (e-EDM) over atomic-based measurements. An understanding of details of the electronic structure of the ground state of PbF is critical to quantify this sensitivity. The hyperfine constants of the molecule provide a unique test of our understanding of the ground-state wave function of the molecule. Here we present a comparison of our latest measurements to previous predictions.

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