

Abstract Submitted
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^{207}PbF near-degeneracy & BaF microwave global fit RICHARD MAWHORTER, JOSE MUNOZ-LOPEZ, YONGRAK KIM, ANDREAS BIEKERT, Pomona College, TREVOR SEARS, Stony Brook University and Brookhaven National Laboratory, JENS-UWE GRABOW, Leibniz Universitaet Hannover, A.D. KUDASHOV, L.V. SKRIPNIKOV, A.V. TITOV, A.N. PETROV, NRC Kurchatov Institute PNPI St. Petersburg State University — The 3 spin particles in ^{207}PbF (both nuclei and the unpaired electron) combine to produce the near-degeneracy of two levels of opposite parity, as verified by Fourier transform microwave (FTMW) spectroscopy [1]. This makes it an ideal candidate for the study of charge-parity violation effects and the variation of fundamental constants [2]. Further theoretical work has improved our detailed understanding of both ^{207}PbF and ^{208}PbF [3], and the theoretical indication that the finely split +/- parity levels grow monotonically closer for higher vibrational states has held up as we have extended our experimental results up to $v = 6$ and $v = 7$, respectively. We will also present PbF vibrational lifetime calculations along with a new global fit for existing BaF microwave data. TJS acknowledges support from Contract No. DE-SC0012704 with the U.S. Department of Energy, Office of Science, supported by its Division of Chemical Sciences, Geosciences and Biosciences within the Office of Basic Energy Sciences., as do RM, AB, YK, & JM-L from Pomona College & J-UG from the Deutsche Forschungsgemeinschaft (DFG). ¹ R. Mawhorter, *et al.*, Phys. Rev. A **84**, 022508 (2011). ² V.V. Flambaum, *et al.*, Phys. Rev. A **88**, 052124 (2013). ³ L.V. Skripnikov, *et al.*, Phys. Rev. A **90**, 064501 (2014).

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