

Abstract Submitted
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Precise determination of atomic g-factor ratios from a dual isotope magneto-optical trap¹ I. CHAN, B. BARRETT, A. CAREW, C. MOK, A. KUMARAKRISHNAN, Department of Physics and Astronomy, York University — We demonstrate a technique, for carrying out precise measurements of atomic g-factor ratios, which relies on measurements of Larmor oscillations from coherences between magnetic sublevels in the ground states of ⁸⁵Rb and ⁸⁷Rb atoms confined in a dual isotope magneto-optical trap. We show that a measurement of $g_F^{(87)}/g_F^{(85)}$ with a resolution of 0.69 parts per 10⁶ is possible by recording the ratio of Larmor frequencies in the presence of a constant magnetic field. This represents the most precise single measurement of $g_F^{(87)}/g_F^{(85)}$ without correcting for systematic effects (I. Chan et al., Phys. Rev. A **84**, 032509 (2011)).

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A. Kumarakrishnan
Department of Physics and Astronomy, York University

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