

Abstract Submitted
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Testing quantum electrodynamics in the lowest singlet state of neutral beryllium-9¹ WILL WILLIAMS, CARSON PATTERSON, ALISHA VIRA, BRUCE HAWKINS, Smith College — We performed high precision spectroscopy on the $2s2p$ $J=1$ singlet state in neutral beryllium-9. This result serves as a test of quantum electrodynamics and as an assessment of theoretical methods used to predict the energy levels of beryllium. A frequency quadrupled titanium sapphire laser at 235 nm was used to probe a beam of atomic beryllium. The frequency was measured to high precision by stabilizing the 470 nm light out of the frequency doubler to an ultra-low expansion cavity that was calibrated using molecular tellurium lines. This experimental method allowed us to improve the precision of the energy level to which the singlet state is known by more than 3 orders of magnitude.

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Will Williams
Smith College

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