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56 - Ultrahigh-Precision Measurement of the n = 2 Triplet P Fine Structure of Atomic Helium Using Frequency-Offset Separated Oscillatory Fields

Tuesday 4 June 2019 17:27 (2 minutes)

For decades, improved theory and experiment of the n=2 ^{3}P fine structure of helium have allowed for increasingly precise tests of quantum electrodynamics, determinations of the fine-structure constant α, and limitations on possible beyond-the-standard-model physics. Here we use the new frequency-offset separated-oscillatory-fields technique to measure the $2^3P_2 \rightarrow 2^3P_1$ interval. Our result of 2 291176590(25) Hz represents a major step forward in precision for helium fine-structure measurements.

Authors: KATO, K. (York University); SKINNER, T. D. G. (York University); HESSELS, E. A. (York University)

Presenter: KATO, K. (York University)

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