Abstract Submitted
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Electron-helium scattering in the presence of a laser field at moderate incident energies[1] BRUNO DEHARAK, LUIS LADINO, University of Kentucky, NICHOLAS MARTIN — We have begun to perform a series of experiments that examine electron-helium scattering in the presence of an Nd:YAG laser field. The goal of these experiments is to span the range of incident electron energies from 50 eV to 250 eV, and compare the results to Kroll-Watson approximation[2] (KWA) calculations. Effects of an intense laser field on the elastic scattering of electrons from argon were first reported by Andrick in 1976.[3] In general, KWA calculations have been adequate to describe experimental results where the photon energy is significantly less than the incident electron energy – a major exception being the case of small scattering angles where large discrepencies have been noted.[4] Our experiments will test the KWA over a range of electron incident energies that has not been previously investigated.

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[3]D. Andrick and L. Langhans, J. Phys. B 9, L459 (1976)
[4]e.g., B. Wallbank and J. K. Holmes, Phys. Rev. A 48, R2515 (1973)

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