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Direct Measurement of the Cesium $6P_{3/2}$ Excited State Diffusion Coefficient in Helium Using Degenerate Four-Wave Mixing Techniques[1]
MICHAEL SHAFFER, USAFA, MIRELA GEARBA, University of Southern Mississippi, TAYLOR LILLY, RANDALL KNIZE, USAFA — Measurements of diffusion coefficients for excited state atoms can prove difficult since the distances traveled prior to decay are relatively short. An analysis using the degenerate four-wave mixing signal as a function of relative angle allows for a direct measurement of excited state diffusion coefficients in alkalis. The results from our investigation of the diffusion coefficients for the $6P_{3/2}$ excited state of cesium in the presence of a helium buffer gas at various pressures will be presented.

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