

Abstract Submitted
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Time-resolved UV-IR pump-stimulated emission pump spectroscopy to probe the collisional dynamics of highly excited cesium vapor¹
SALAH UDDIN MD, PHILL ARNDT, BURCIN BAYRAM, Miami University —
We have used a pump-stimulated emission pump spectroscopic technique to measure the collisional dynamics in the highly excited level of ^{133}Cs atomic vapor. Aligned $8p^2P_{3/2}$ cesium atoms were produced by a pump laser. A second laser, stimulated emission pump, promoted the population exclusively down to the $5d^2D_{5/2}$ level. The intensity of the $5d^2D_{5/2} \rightarrow 6s^2S_{1/2}$ cascade fluorescence at 852.12 nm was monitored. The linear polarization degree for the $6s^2S_{1/2} \rightarrow 8p^2P_{3/2} \rightarrow 5d^2S_{5/2}$ transition was measured in the presence of argon gas at various pressures. From the measurement, we obtained the collisional cross section (disalignment cross section) value in the $8p^2P_{3/2}$ level cesium.

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Burcin Bayram
Miami University

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