

Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Collisional depolarization of the atomic Cs- $6s^2S_{1/2} \rightarrow 10s^2S_{1/2}$ transition with argon buffer gas SEDA KIN, MORGAN J. WELSH, S. BURCIN BAYRAM, Miami University, OH — We report an experimental investigation of collisional depolarization of the atomic cesium $6s^2S_{1/2} \rightarrow 10s^2S_{1/2}$ two-color two-photon polarization spectrum. The Ar pressure dependence of the spectrum revealed strong depolarization in the vicinity of the $6s^2S_{1/2} \rightarrow 6p^2P_{3/2} \rightarrow 10s^2S_{1/2}$ stepwise resonances using short pulse pump-probe technique. The linear polarization degree was measured with the first laser tuned to resonance and the second laser tuned within a $\pm 11\text{cm}^{-1}$ range. In the absence of collisions, the measured polarization spectrum is in excellent agreement with calculations. The polarization measurement on the $6s^2S_{1/2} \rightarrow 6p^2P_{3/2} \rightarrow 10s^2S_{1/2}$ transition and an overview of the experimental techniques of our results are also presented.

Seda Kin
Miami University, OH

Date submitted: 18 Mar 2005

Electronic form version 1.4