Abstract Submitted
for the DAMOP11 Meeting of
The American Physical Society

Experimental Investigation of Two-color Polarization Spectroscopy in Rubidium P. KULATUNGA, Hobart and William Smith Colleges, Department of Physics, Geneva, NY 14456, L.R. ANDREWS, C.I. SUKENIK, Old Dominion University, Department of Physics, Norfolk, VA 23529, H.C. BUSCH, Georgia College & State University, Department of Chemistry, Physics and Astronomy, Milledgeville, GA 31061 — We will report on our investigation of two-color polarization spectroscopy of room temperature rubidium atoms in a glass cell when one laser is tuned from the 5S to 5P transition at 780nm and a second laser is tuned from the 5P to 5D transition at 776nm. Both colors are derived from external cavity diode lasers and both common isotopes of rubidium have been studied. We will discuss the laser intensity dependence and the effect of applied magnetic fields on the observed line shapes. Finally, we will demonstrate how the spectra can be applied to frequency stabilization of the diode lasers.

Charles Sukenik
Old Dominion University

Date submitted: 02 Feb 2011 Electronic form version 1.4