

Abstract Submitted  
for the DAMOP15 Meeting of  
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**Polarization spectroscopy of the sodium dimer utilizing a triple-resonance technique in the presence of argon**<sup>1</sup> PHILLIP ARNDT, TIMOTHY HORTON, JACOB MCFARLAND, BURCIN BAYRAM, Miami University, MIAMI UNIVERSITY SPECTROSCOPY TEAM — The collisional dynamics of molecular sodium in the  $6^1\Sigma_g$  electronic state is under investigation using a triple resonance technique in the presence of argon. A continuous wave ring dye laser is used to populate specific rovibrational levels of the  $A^1\Sigma_u$  electronic state. A pump-probe technique is then employed where the pump laser populates the  $6^1\Sigma_g$  state, and the probe laser dumps the population to the  $B^1\Sigma_u$  state. From this level, fluorescence is detected as the system decays to the  $X^1\Sigma_g$  state. We measure the polarization of this signal in the presence of various argon pressures. We will present our current work as well as the processes involved in the experiment.

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