Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Evaluation of Systematic Effects and Data Acquisition System for CALIOPE, an Experimental Search for CP Violation in ortho-Positronium Decays CHELSEA BARTRAM, REYCO HENNING, GULDEN OTHMAN, JAKE MURPHY, UNC Chapel Hill — CALIOPE, or CP Aberrant Leptons in o-Ps Experiment, will search for CP-violating angular correlations between gamma rays in the decay of positronium. CALIOPE uses a tagged source inserted between two disks of aerogel centered in an annular array of 24 sodium iodide bars. We present an in-depth study of the systematics as well as developments on the DAQ. Specifically, we will discuss the implications of the results from our detailed Monte Carlo simulation as well as the outcomes of several toy Monte Carlo models. We will also present the DAQ design and results from early tests to characterize the position and energy reconstruction of the array.

Chelsea Bartram
UNC Chapel Hill

Date submitted: 30 Jun 2016 Electronic form version 1.4