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**A Study of the Nucleon Electromagnetic Response: the Compton@HIGS Program**

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The electromagnetic properties of the nucleon arise from its composite nature. External electric and magnetic fields induce dipole moments described by the scalar polarizabilities ( $\alpha_N$  and  $\beta_N$ ), while the response of the nucleon spin is described by four spin polarizabilities. Consequently, studying these observables provides a window into the interaction among the constituent charges and currents in the nucleon, described theoretically by QCD. High precision measurements of the scalar and spin polarizabilities provide critical benchmarks for studying the low-energy, non-perturbative regime of QCD and emerging calculations from lattice QCD and Chiral Effective Field Theories. To this end, a program of Compton scattering experiments on light nuclei is underway at the High Intensity Gamma Source (HI $\gamma$ S) at Duke University, with the aim of providing the world's most precise measurements of the polarizabilities. We report preliminary measurements of the Compton scattering differential cross section for  $^4\text{He}$ ,  $^2\text{H}$ , and  $^1\text{H}$  and discuss the sensitivity of these data to the polarizabilities.