

Abstract Submitted
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Overview of high- Q^2 nucleon form factor program with Super BigBite Spectrometer in JLab's Hall A¹ ANDREW PUCKETT, University of Connecticut and Jefferson Lab, JEFFERSON LAB HALL A AND SUPER BIG-BITE SPECTROMETER COLLABORATION — The elastic electromagnetic form factors (EMFFs) of the nucleon describe the impact-parameter-space distributions of electric charge and magnetization in the nucleon in the infinite momentum frame. The form factors are among the simplest and most fundamental measurable dynamical quantities describing the nucleon's structure. Precision measurements of the nucleon form factors provide stringent benchmarks testing the most sophisticated theoretical models of the nucleon, as well as *ab initio* calculations in lattice QCD and continuum non-perturbative QCD calculations based on the Dyson-Schwinger equations. Measurements at momentum transfers Q in the few-GeV range probe the theoretically challenging region of transition between the non-perturbative and perturbative regimes of QCD. The recent upgrade of the Continuous Electron Beam Accelerator Facility (CEBAF) to a maximum electron beam energy of 11 GeV will facilitate the measurement of the nucleon helicity-conserving (F_1) and helicity-flip (F_2) form factors of both proton and neutron to $Q^2 > 10 \text{ GeV}^2$. In this talk, I will present an overview of the Super BigBite Spectrometer, currently under construction in CEBAF's experimental Hall A, and its physics program of high- Q^2 nucleon EMFF measurements.

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