APR11-2011-000111

Abstract for an Invited Paper for the APR11 Meeting of the American Physical Society

Recent Results and Future Measurements of Elastic Nucleon Form Factors

SEAMUS RIORDAN, University of Massachusetts, Amherst

The electromagnetic form factors of the nucleon provide experimental access to the underlying charge and magnetic moment distributions from quarks. These form factors provide excellent testing grounds for QCD and QCD-inspired models and are fundamentally important in understanding non-perturbative QCD. By studying them, they provide insight into the underlying mechanisms relevant to the generation of nucleon structure. Recently, these form factors have generated significant attention both experimentally and theoretically, and over the last year in particular, the electric form factors of the proton and neutron have both been measured to unprecedentedly high momentum transfer. An overview of newly published measurements at both low and high momentum transfer will be presented and compared with previous measurements and modern models. Assuming nucleon charge symmetry, these also allow for a quark flavor separation to be done to moderate momentum transfer for the first time. Finally, an overview will be presented of future approved measurements which push the limits of what is currently experimentally accessible.