

Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Global Analysis of the Strange Vector and Axial Form Factors of the Nucleon and Their Uncertainties¹ JOHN SCHAUB, STEPHEN PATE, New Mexico State University — We have studied the strange-quark contributions to the elastic vector and axial form factors of the nucleon, using all available elastic electroweak scattering data sensitive to these contributions. Specifically, we combine elastic νp and $\bar{\nu} p$ scattering cross section data from the Brookhaven E734 experiment with elastic ep and quasi-elastic ed and $e-^4\text{He}$ scattering parity-violating asymmetry data from the SAMPLE, HAPPEX, G0 and PVA4 experiments. We have not only determined these form factors at individual values of momentum-transfer (Q^2), as has been done recently, but also have fit the Q^2 -dependence of these form factors using simple functional forms. We present the results of these fits using existing data, along with some expectations of how our knowledge of these form factors can be improved if a variety of approved and proposed experiments are completed.

¹The US Department of Energy supported this work.

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Date submitted: 21 Oct 2009

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