

Don't Forget to Measure Δs

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Measurements of the strange quark form factors of the nucleon are intimately related to measurements of the strange quark contribution to the spin structure of the nucleon, as the value of the strange axial form factor G_A^s at $Q^2 = 0$ is Δs , the first moment of the helicity-dependent strange quark momentum distribution $\Delta s(x)$. The program of parity-violating electron-nucleon scattering measurements at Bates, Mainz, and Jefferson Lab, seeking to measure the strange electromagnetic form factors, are also sensitive to the strange axial form factor, and usually take Δs to be a measured quantity. But there has never been a direct measurement of Δs . The value typically used is derived from a combination of theoretical and experimental input, and hangs on a number of assumptions for which the theoretical uncertainties are completely unknown. I will discuss the implications of this situation for the current program of electron-nucleon experiments and look ahead to a proposed experiment that could address this important issue.