

# $\vec{e} - {}^2H$ Parity Violating Deep Inelastic Scattering at Jefferson Lab 6 GeV

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The parity violating asymmetry in deep inelastic scattering offers us a useful tool to study the weak neutral couplings and the hadronic structure of the nucleon. During the Jlab 6GeV PVDIS experiment, we have precisely measured the parity violating asymmetry of polarized electron beam scattering off an unpolarized Deuteron target in the deep inelastic scattering region at two  $Q^2$  values of 1.1 and 1.9 (GeV/c)<sup>2</sup>. Assuming the higher twist effect is small, the asymmetry at  $Q^2=1.9(\text{GeV}/c)^2$  can be used to extract the weak coupling combination  $2C_{2u} - C_{2d}$ . Combining the asymmetries at both  $Q^2$  values provides us extra knowledge on the higher twist effects, which will support the future 12GeV PVDIS program at JLab.

In this talk I will review the experiment and describe all systematic uncertainties. I will present the final asymmetry results, as well as preliminary results on  $2C_{2u} - C_{2d}$  and higher twist effects.