

Abstract Submitted  
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**Double Polarization Asymmetry Measurement of the Electric Form Factor of the Neutron at  $Q^2=1.16 \text{ GeV}^2$  Using the Semi-Exclusive Reaction  ${}^3\vec{\text{He}}(\vec{e}, e'n)pp$** <sup>1</sup> RICHARD OBRECHT, Univ of Connecticut - Storrs — The space-like electric form factor of the neutron has been extracted at  $Q^2 = 1.16 \text{ GeV}^2$  via a beam-target helicity asymmetry measurement using the semi-exclusive reaction  ${}^3\vec{\text{He}}(\vec{e}, e'n)pp$ . The Jefferson Lab Hall A experiment E02-013 ran in 2006 utilizing the 6 GeV CEBAF for its high-duty, longitudinally polarized electron beam. The double-arm coincidence experiment detected the quasielastically scattered electrons in a large angular and momentum acceptance spectrometer referred to as BigBite. The recoiling nucleons were detected in a large neutron detector, built out of planes of scintillator arrays interlaced with iron and lead plates to increase the probability of inducing a hadronic shower. The polarized  ${}^3\text{He}$  target used the novel technique of hybrid spin-exchange optical pumping, resulting in a 10 atm target that could sustain polarizations greater than 50% at a beam current of  $8 \mu\text{A}$ . Presented will be the current analysis and a preliminary result for  $G_E^n$  at  $Q^2=1.16 \text{ GeV}^2$ .

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