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Target Single-Spin Asymmetry Measurements in Quasi-Elastic ${}^3\mathrm{He}\uparrow(\mathbf{e},\,\mathbf{e}')$ BO ZHAO, JEFFERSON LAB HALL A COLLABORATION — The target single-spin asymmetry for the neutron, A_y , was measured using the inclusive quasi-elastic ${}^3\mathrm{He}\uparrow(\mathbf{e},\,\mathbf{e}')$ reaction in Hall A at Jefferson Lab with a vertically polarized ${}^3\mathrm{He}$ target for $Q^2=0.13,~0.46$ and $0.97~\mathrm{GeV}^2$. Since the target single-spin asymmetry is expected to be zero in the one-photon exchange approximation, the non-zero results from this experiment clearly demonstrate the effects due to two-photon exchange. They establish the two-photon exchange process as a powerful tool to probe hadron structure, such as information on Generalized Parton Distributions. The preliminary results of this experiment will be presented.

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