

Abstract Submitted
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Polarization Transfer in ${}^4\text{He}(\vec{e}, e'\vec{p}){}^3\text{H}$ MICHAEL PAOLONE¹, University of South Carolina, JEFFERSON LAB HALL A COLLABORATION — Polarization transfer in quasi-elastic nucleon knockout is sensitive to the properties of the nucleon in the nuclear medium, including possible modification of the nucleon form factor and/or spinor. In our recently completed experiment E03-104 at Jefferson Lab we measured the proton recoil polarization in the ${}^4\text{He}(\vec{e}, e'\vec{p}){}^3\text{H}$ reaction at a Q^2 of $0.8 (\text{GeV}/c)^2$ and $1.3 (\text{GeV}/c)^2$ with unprecedented precision. These data complement earlier data between 0.4 and $2.6 (\text{GeV}/c)^2$ from both Mainz and Jefferson Lab, in which the measured ratio of polarization-transfer coefficients differs from a fully relativistic DWIA calculation. The earlier polarization-transfer data are equally well described by the inclusion of a medium modification of the proton form factors predicted by a quark-meson coupling model and by a recent calculation including, particularly, a spin-dependent charge exchange in the final-state interaction. However, the preliminary analysis of our present data possibly implies an unexpected Q^2 dependence of the ratio of polarization-transfer coefficients. Due to its high statistical precision the new data allow for a detailed study of the missing momentum dependence of individual polarization-transfer coefficients in the ${}^4\text{He}(\vec{e}, e'\vec{p}){}^3\text{H}$ reaction. Final results will be discussed.

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