

Abstract Submitted
for the APR07 Meeting of
The American Physical Society

Simulation of semi-inclusive deep inelastic scattering from polarized ep collisions at proposed EIC energies¹ JOSEPH SEELE, EDWARD KINNEY, University of Colorado at Boulder — A high luminosity electron-ion collider (EIC) is proposed which will allow the study of polarized electron-polarized proton collisions. One goal of this study is the determination of the polarized quark distributions of the proton. Several machine designs are under study that would operate with different luminosities and different collision energies. Using standard high-energy simulation programs, the semi-inclusive hadron yields and asymmetries from deep inelastic scattering have been obtained. In particular, these simulations were used to estimate the uncertainties which could be achieved in a determination of polarized quark distributions using the standard flavor-tagging techniques employed in fixed target experiments. While the focus is on the statistical uncertainties, limitations to reducing the systematic uncertainty will also be presented. Initial studies aimed at developing the hadronic detection requirements will be presented as well.

¹This work is supported in part by the US Department of Energy.

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Date submitted: 12 Jan 2007

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