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Abstract for an Invited Paper
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Next-generation nuclear physics with polarized light ions at EIC

CHRISTIAN WEISS, Jefferson Lab

The EIC will enable a program of high-energy electron/photon scattering on light ions with polarized beams (deuteron, 3He) and forward detection of the nuclear breakup state (spectator tagging, coherent processes). Physics objectives include the precise determination of the neutron spin structure, studies of the QCD origin of nucleon interactions (nuclear modification of partonic structure, short-range correlations), and the quark/gluon imaging of light nuclei (nuclear generalized parton distributions). The detected nuclear breakup state can be used to infer the nuclear configuration during the high-energy process and provides essential new information for physics analysis. Such reactions explore the intersection of high-energy scattering and low-energy nuclear structure and pose many interesting questions in theory, analysis, and simulation. The talk will give an introduction to the light-ion physics program with EIC, including the physics concepts and objectives, examples of simulated measurements, the forward detection capabilities of the EIC designs, and available resources for further study (simulation tools). The presentation will be aimed at a general nuclear/hadronic physics audience.