



Contribution ID: 2

Type: not specified

Investigation of Vector Meson Backward-Production Capabilities at the EIC

Backward (u -channel) production of vector mesons in ep collisions is characterized by a final state consisting of a nearly-stopped proton and a vector meson with a large forward momentum. In conventional (forward, t -channel) production, the momentum transfer from the proton to the meson is small and is modeled by pomeron-exchange trajectories. The less well-understood u -channel production is modeled by a baryon-exchange trajectory and can provide unique insight into the nucleon wave function and inform contributions to baryon stopping in heavy-ion collisions. The Electron-Ion Collider presents the nuclear physics community with an opportunity to measure u -channel production at higher center-of-mass energies than previously available. Measurements of backward-production events require far-forward detectors for observing high-rapidity mesons. eSTARlight, a code for modeling vector-meson production, is used to simulate backward-production events at the EIC. Several production channels will be analyzed at the known EIC collision energies, and detection capabilities for proposed detector designs will be assessed.

Primary author: SWEGER, Zachary (University of California, Davis)

Presenter: SWEGER, Zachary (University of California, Davis)