



Contribution ID: 285

Type: Parallel Session Talk

Next-generation spin physics measurements with polarized deuteron and spectator tagging

Tuesday 9 April 2019 12:10 (20 minutes)

A future EIC with forward detectors would enable measurements of DIS on the deuteron with detection of a forward proton/neutron (spectator tagging) over a wide kinematic range. Spectator tagging controls the nuclear configuration during the DIS process and permits an accurate differential treatment of nuclear effects. When combined with deuteron polarization, the method enables next-generation measurements of neutron spin structure and nuclear partonic structure. We summarize recent progress in the development of the spectator tagging program for the EIC. This includes (a) a theoretical framework for precise extraction of neutron spin structure with spectator tagging (realistic deuteron structure, S and D waves) and assessment of the impact of experimental deuteron polarization (using $-1/0/+1$ spin states or only $+1/-1$ spin states) [1]; (b) novel tensor-polarized deuteron structure functions in spectator tagging, representing genuine $A = 2$ effects in nuclear partonic structure.

[1] W. Cosyn, C. Weiss, arXiv:1902.03678 [hep-ph]; in progress.

Authors: COSYN, Wim; WEISS, Christian (Jefferson Lab)

Presenters: COSYN, Wim; WEISS, Christian (Jefferson Lab)

Session Classification: WG7: Future of DIS

Track Classification: WG7: Future of DIS