

XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



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Theoretical overview of spectator tagging in DIS measurements

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In spectator tagged process on a nucleus, a nucleon or nuclear fragment is detected in the target fragmentation region where the spectator has a slow (0 - few 100 MeV) momentum compared to the ion center-of-mass. Detection of the spectator results in additional control over the initial nuclear configuration of the ion target compared to inclusive scattering where one averages over all possible configurations. We discuss the theoretical framework used to describe spectator tagged reactions, which is based on light-front quantization and results in a natural separation of nuclear and nucleon structure. We focus on applications with the deuteron (free neutron structure and deuteron short-range structure using tensor polarization) and discuss the structure of the polarized tagged cross sections. We comment on the treatment of final-state interactions and extensions to targets beyond the deuteron.

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