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## Tagged spectator DIS off the deuteron as a tool to extract neutron structure

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We present work on a model used to describe the process of tagged spectator DIS off the deuteron. The model uses a factorized approach and includes the effect of final-state interactions at intermediate to large Bjorken  $x$  through effective rescattering amplitudes of the produced hadrons  $X$  with the “spectator” nucleon. Comparisons with recent Jefferson Lab data are shown and discussed, also for the inclusive DIS case. We discuss the pole extrapolation method applied to the tagged spectator DIS process. This approach is based on the extrapolation of the measured cross sections at different momenta of the detected spectator proton to the non-physical pole of the bound neutron in the deuteron. The advantage of the method is that it makes it possible to suppress nuclear effects in a maximally model independent way. We apply the method to the recently measured BONuS data to extract the unpolarized neutron structure function at large  $x$ , and obtain a surprising  $x$  dependence at  $x \leq 0.6$ , indicating the possibility of a rise in the neutron to proton structure function ratio. We discuss applications of the method at a possible EIC, both for the unpolarized and polarized case.

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