

Tagged DIS with BAND: Experimental overview

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The Backward Angle Neutron Detector (BAND) was designed to detect backward-recoiling spectator neutrons from the deep inelastic scattering (DIS) of electrons off of protons bound in deuterium. This technique of spectator-tagged DIS allows the determination of the proton's nuclear modification as a function of virtuality or proton initial momentum. BAND was installed upstream of the CLAS12 spectrometer in Hall B at Jefferson Lab, and took production data in January 2020.

In this talk, I will present the physics background and motivations for our experiment. Then I will give an overview about the design and construction of BAND and how it works with CLAS12 to detect spectator neutrons. Lastly, I will talk about the development of GEANT4 simulations to provide critical input to the BAND analysis.