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The neutron structure function F_2 at high-x with BONuS at CLAS

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The Barely Off-Shell Nucleon Structure (BONuS) experiment at CLAS will measure the neutron structure function F_2 for 0.1 < x < 0.8 over a broad Q^2 range, from 1 to 14 GeV²/c, using electron scattering from deuterium with spectator-proton tagging. By selecting the low-momentum recoil protons at large backward angles, final-state interactions as the deuteron breaks up can be minimized, and the deep-inelastic kinematics for the neutron can be determined. This technique, which has been used successfully at CLAS at 6 GeV, will be extended to 11 GeV beam energy with significantly increased luminosity. Details of the BONuS third generation Radial Time Projection Chamber and expected high- $x F_2^n$ results will be presented.

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