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Barely Off-shell Nucleon Structure. SVYATOSLAV TKACHENKO, Old Dominion University, CLAS COLLABORATION — We know much less about the neutron than the proton due to the absence of free neutron targets. Neutron information has to be extracted from data on nuclear targets like deuterium. This requires corrections for off-shell and binding effects which are not known from first principles and therefore are model-dependent. As a consequence, the same data can be interpreted in different ways, leading to different conclusions about important questions such as d/u quark ratio at large momentum fraction x. The Barely Off-shell NUcleon Structure (BONUS) experiment at Jefferson Lab addressed this problem by tagging spectator protons in coincidence with inelastic electron scattering from deuterium. A novel compact radial time projection chamber was built to detect low-momentum, backward moving protons, ensuring that the scattering took place on a loosely bound neutron. The scattered electron was detected with Jefferson Lab's CLAS spectrometer. Data were taken at beam energies of 2, 4 and 5 GeV. We will present our experimental method and preliminary results on the extracted structure function F_2^n of the neutron, both in the resonance and deep inelastic regions.

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