

DIS 2015 - XXIII. International Workshop on Deep-Inelastic Scattering and
Related Subjects

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Quark-hadron duality in the free neutron F2 structure function

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The Jefferson Lab. experiment BONuS used a novel spectator-tagging technique to measure the inclusive electron-free neutron scattering cross section and extract the F2 structure function. This data was used to reconstruct moments of F2 in the three prominent resonance region, as well as the moments integrated over the entire resonance region.

Comparisons of the experimental results with moments obtained from global parton distribution function parametrizations seem to suggest that the quark-hadron duality hypothesis holds locally for the neutron in the second and third resonance regions down to Q^2 of 1 GeV², with up to 20% violations observed in the first resonance region.

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