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Extraction of Neutron Structure Functions from (Semi)InclusiveDeuteron Data NARBE KALANTARIANS, Hampton University — Structure functions parameterize fundamental information about the internal structure of the nucleon, and in the deep-inelastic region are given in terms of the longitudinal momentum distributions of the nucleons' quark and gluon constituents. Compared to the copious amount of proton structure function data, there is considerably less for the neutron, which is mainly derived from deuteron data. Extracting neutron structure functions from the deuteron results in ambiguities from the necessary nuclear corrections. Such ambiguities can be confronted using free neutron and proton and inclusive deuteron data. The Barely Off-shell Neutron Structure experiment (BoNuS) ran in experimental Hall B at Jefferson Lab in 2005 and provided a virtually free neutron target for the first time. Extraction of the free neutron structure functions has been performed via global fits to both the BoNuS and deuteron inclusive data, utilizing an existing fit to the free proton, within the framework of the weak binding approximation and utilizing various nuclear potentials. We will report on the results of this fitting effort and the consistency between neutron information from BoNuS and the impulse approximation.

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