

Abstract Submitted
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New Measurements of the Nuclear Dependence of the EMC Effect AJI DANIEL, University of Houston, E03-103 COLLABORATION — The European Muon Collaboration discovered that structure functions in nuclei are modified compared to those for a free nucleon. Even after twenty five years of experimental and theoretical investigations, the origin of the effect is still not well explained. I will present preliminary results from Jefferson Lab experiment E03-103 — a precision measurement of the EMC effect on light to medium-heavy nuclei with emphasis on the large x_{Bj} region. Our data will directly measure the A - dependence of the EMC effect. Data on light nuclei, ^3He and ^4He , allow direct comparison to ‘exact’ few-body calculations of the EMC effect, and will also provide guidance for calculations of nuclear effects in deuterium. The large x_{Bj} data are particularly sensitive to the details of nuclear structure, and our data will provide a reliable base-line to constrain models that incorporate conventional nuclear effects such as binding and Fermi motion. Conventional nuclear effects lead to modifications of the structure functions at all x_{Bj} values, so that a quantitative understanding is important before the addition of more exotic effects that might be required to explain the observed nuclear dependence.

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