

Abstract Submitted  
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**A detailed study of the nuclear dependence of the EMC effect and short-range correlations**<sup>1</sup> J. ARRINGTON, Argonne National Lab, N. FOMIN, Los Alamos National Lab, A. DANIEL, Ohio University, D. DAY, University of Virginia, D. GASKELL, P. SOLVIGNON, Jefferson Lab — Because nucleons are closely packed in medium-to-heavy nuclei, one expects to observe density-dependent effects in their structure. Such effects can be seen in the nucleon momentum distribution in the form of a significant high-momentum tail related to the short-range interaction between nucleons, generating high-momentum short-range correlations (SRCs). High nuclear densities also imply overlap between neighboring nucleons, leading to the possible modification of their internal quark structure, which may contribute to the EMC effect. Recent Jefferson Lab experiments provided detailed information on both SRC contributions [1] and the EMC effect [2] in a range of light and heavy nuclei. We examine these results and previous data to make a detailed comparison of the A dependence of SRCs and nuclear quark distributions, along with a detailed comparison of the nuclear dependence of these two effects. We also examine the correlation between these effects, first studied in [3], in the context of different pictures of the underlying connection between these observables [4].

[1] N. Fomin, et al., PRL 108 (2012) 092502

[2] J. Seely, et al., PRL 103 (2009) 202301

[3] L. Weinstein, et al., PRL 106 (2011) 052301

[4] J. Arrington, et al., arXiv:1206.6364 (2012)

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