

Abstract Submitted
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Probing nucleon substructure in UPCs¹ HEIKKI MNTYSAARI, University of Jyväskylä — We discuss how simultaneous description of coherent and incoherent vector meson production data from UPCs can be used to constrain the nucleon substructure fluctuations in light and heavy nuclei. We consider subnucleon fluctuations in deuteron, probed in d+Au collisions at RHIC, and in lead, probed in lead-lead collisions at the LHC. We show that the RHIC and LHC data prefers nucleon substructure fluctuations compatible with the HERA data. Additionally, we discuss the most important model uncertainties limiting that currently limit the possibility to apply Color Glass Condensate effective field theory to describe these collisions. In particular, we discuss how to systematically constrain the vector meson wave function which results in a large model uncertainty. References: T. Lappi, H. M, J. Penttala, arXiv:2006.02830 [hep-ph] H.M, B. Schenke, Phys.Rev.C 101 (2020) 1, 015203 H.M, B. Schenke, Phys.Lett.B 772 (2017) 832-838

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