

XVth Quark Confinement and the Hadron Spectrum



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Linear relation between the Gluon EMC effect and short-range correlation

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The origin of the EMC effect is one of the major unsolved problems in nuclear physics. Recent studies suggest that the EMC and Short Range Correlation (SRC) are correlated, and quantitative relations are obtained. In this talk, I will introduce our recent work on the EMC effect for the gluon and its correlation with the SRC. We explore the gluon EMC effect through heavy flavor production in DIS, and the SRC through sub-threshold photoproduction of J/Ψ . Based on an effective field theory (EFT) analysis, we derive a linear relation between the gluon EMC effect and the SRC scaling factor measurements. Examining this relation at future experimental facilities such as electron-ion collider (EIC) can help to accomplish the long-standing quest for the nucleon sub-structure.

Primary author: ZHAO, Shuai (Tianjin University)

Co-authors: Prof. XU, Ji (Zhengzhou University); Prof. WANG, Wei; Prof. YANG, Xing-Hua (Shandong University of Technology)

Presenter: ZHAO, Shuai (Tianjin University)

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