

DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 204

Type: **Parallel talk**

Measuring the spatial gluons distribution in nuclei with EPIC at the EIC

Thursday 30 March 2023 12:10 (20 minutes)

One of the golden measurements at the Electron-Ion Collider (EIC) is to measure the coherent diffractive Vector Meson (VM) production on a heavy-nucleus target. The measurement is expected to be sensitive to the non-linear gluon dynamics - saturation, and most importantly, it also provides the gluon density distribution of the nucleus. While the measurement was proposed in the EIC White Paper 10 years ago, it is not until recently that the experimental challenges of this measurement were realized. In this talk, I will give an overview on the experimental developments from the EIC detector proposals on this measurement, particularly with the lessons learned. I will discuss the key challenges and future opportunities for development, e.g., incoherent production background, energy resolution of EMCAL, etc. Based on a new single-stack software package in EPIC, full simulation results with the most up-to-date detector configuration will be presented.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

No

Primary author: TU, ZhouDunming

Presenter: TU, ZhouDunming

Session Classification: WG2

Track Classification: WG2: Small-x, Diffraction and Vector Mesons