

## Measuring the spatial gluons distribution in nuclei with ATHENA at the EIC

*Wednesday 4 May 2022 10:00 (20 minutes)*

One of the golden measurements at the Electron-Ion Collider (EIC) is to measure the coherent diffractive Vector Meson (VM) production off heavy nucleus. 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 established 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 discuss the key challenges and their solutions of measuring the diffractive VM in electron-gold collisions, including detector resolution and overwhelming physics background. Full simulations based on the ATHENA detector concept at the EIC will be presented.

### Submitted on behalf of a Collaboration?

Yes

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