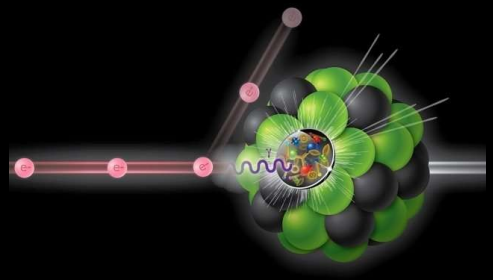

Study of diffractive gluon jet production in electron-ion collisions

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In this work we investigate the diffractive gluon jet production in electron-ion collisions at the energies of the EIC, LHeC, HE-LHeC and FCC-eA, assuming that the diffractive mass is much larger than the photon virtuality. In addition, we apply a model inspired in the GBW parametrization to describe the dipole amplitude, showing that the diffractive cross section is highly sensitive to the saturation scale. Furthermore, we verify that it is possible to extract this scale from the experiment.

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IWARA
From Quarks to Cosmos

Diffractive gluon jet production in electron – ion collisions;

Dipole picture and parton saturation framework;

GBW – like parametrization for the dipole scattering amplitude;

Evaluated at the center - of - mass energies of the EIC, LHeC, HE – LHeC and FCC – eA;

MAIN RESULTS AND CONCLUSIONS

- **The maximum is related to the scale at which unitarity effects become important, i.e., the saturation scale;**
- **Extraction of the saturation scale from data;**