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## Finite-size effects in color-glass condensate and implications for exclusive vector meson production in ultra-peripheral collisions

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The gluon density in protons and nuclei has been observed to increase very rapidly with energy. At high energies, however, nonlinear effects of QCD start to become important, slowing down the evolution of the gluon density and hence giving rise to gluon saturation. This gluon saturation can be naturally described using the color-glass condensate (CGC) effective field theory.

In practice, descriptions using CGC often employ the so-called infinite-target limit which neglects the dependence on the impact parameter in the collision. In this talk, I will discuss the effects of including a finite size for the target and focus especially on exclusive vector meson production in ultra-peripheral collisions [1]. I will show that neglecting the impact parameter can lead to misleading predictions for protons, while for large nuclei the effect is much smaller.

[1] Heikki Mäntysaari, Jani Penttala, Farid Salazar, Björn Schenke, arXiv:2411.13533 [hep-ph]

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