

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



Contribution ID: 173

Type: **Parallel talk**

## Quantum evolution of the 3D gluon distribution at small $x$

*Tuesday 28 March 2023 09:00 (20 minutes)*

Recently, a novel factorization scheme has been put forward in the context of DIS. This new approach allows to connect the moderate  $x$  regime where the partonic picture is manifest to the small  $x$  regime best described by strong classical fields. In this work, we explore quantum evolution of the associated 3D gluon distribution that encodes saturation effects. In this framework, we obtain a new evolution equation that reduces to the BK and BFKL equations at small  $x$  and connects smoothly to DGLAP at moderate  $x$ . We argue that this equation automatically resums large collinear logs that are known to be related to numerical instabilities in the NLO BK equation.

References:

- [1] Renaud Boussarie, Yacine Mehtar-Tani, JHEP 07 (2022) 080, arXiv: 2112.01412 [hep-ph]
- [2] Renaud Boussarie, Yacine Mehtar-Tani, in preparation

### Submitted on behalf of a Collaboration?

No

### Participate in poster competition?

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**Session Classification:** WG2

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