

Activity in STRONG 2020 – Jagiellonian University: people

- **People at JU directly involved in the project:**
Michał Przaszałowicz and Leszek Motyka
- **People at JU currently involved in small-x physics:**
Piotr Korcyl, Mariusz Sadzikowski, Wojtek Słomiński, Tomasz Stebel
- **Estimated contribution to the project for the first 18 months:**
2 person*months

Activity in STRONG 2020 – Jagiellonian University: current research topics (I)

- **Glue production in nucleus-nucleus collisions in the fragmentation region.**

Calculation of the produced gluons' transverse spectra in the CGC approach.

Results given in M. Lushozi, L.D. McLerran, M. Praszalowicz, G. Yu, arXiv:1912.08553

Goal: theoretical understanding of matter production in heavy ion collisions and initial conditions for formation of quark gluon plasma.

- **Investigation of transverse momentum observables for real or virtual electroweak boson hadroproduction in high energy limit.**

Studies of the Drell-Yan process in the small x limit. On the basis of approach developed in:

JHEP 05 (2015) 087, Phys.Rev.D 95 (2017) 11, JHEP 01 (2017) 005, JHEP 12 (2018) 091.

Goal: constraining the gluon transverse momentum distribution and small x resummation with the data.

Activity in STRONG 2020 – Jagiellonian University: current research topics (II)

- **Investigation of higher twist effects in DIS and diffractive DIS on nuclei.**

Use of the approach and results obtained in [Phys.Rev.D 86 \(2012\) 111501](#), [Acta Phys. Polon.B 45 \(2014\) 11, 2079](#), [Eur. Phys. J. C 78 \(2018\)](#) on DIS and DDIS on nucleon to obtain predictions for EIC (Snowmass: EIC Letter of Interest).

Estimates of the higher twist effects within non-linear QCD evolution equations and saturation models.

Goal: studies of multiple scattering on nuclei, determination of higher twist effects, impact on determination of nuclear pdfs.