



LUND
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Soft Modelling and Heavy Ions (2)

How do we model the geometrical distribution of nucleons in colliding nuclei?

How do we determine which nucleon interacts with which nucleon?

What happens if two nucleons end up in the same place.

What is a Color Glass Condensate (CGC), Pomeron, Quark-Gluon Plasma.



Sasha Glazov

Experimental Results from the LHC

Questions for the evening session

- What makes the measurement of the W mass difficult at the LHC? Is it more difficult vs Tevatron?
- Why the measurement of the Z mass is in fact also difficult at the LHC?
- Why data unfolding is required? In which cases it has large/small impact on the result?
- Which processes at the LHC can be used to measure s -quark distribution?
- What is the optimal jet radius for anti- k_t jets at the LHC to reduce non-perturbative corrections?
- Why PDF profiling procedure yields in formally correct from the DGLAP point of view PDFs?



September 14, 2021

1. What is the energy density estimated for central heavy ion collisions at the LHC energies? Can we still describe partons as a collection of distinct individual hadrons?
2. What are some signatures which indicate the formation of QGP in heavy ion collisions?
3. The nuclear modification factor is significantly below unity at high p_T in central AA collisions. How do we understand this effect?

Questions for discussion

Consider: Why do we not see $J/\psi \rightarrow gg$?

Consider: Show in the top quark width $\Gamma(t \rightarrow bW)$, dropping m_b loses terms of $\mathcal{O}(m_b^2/m_t^2) \sim 1\%$.

Consider: Why do we vary scales to estimate higher order corrections?

Consider: Are there other (perhaps kinematic) ratios of scales that arise that lead to logarithms that need to be resummed?

Consider: How are heavy-quark jets not like light-quark jets?