

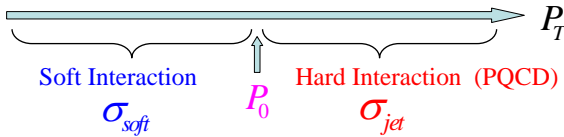
Hadron Productions at LHC Energies with HIJING2.0 Model

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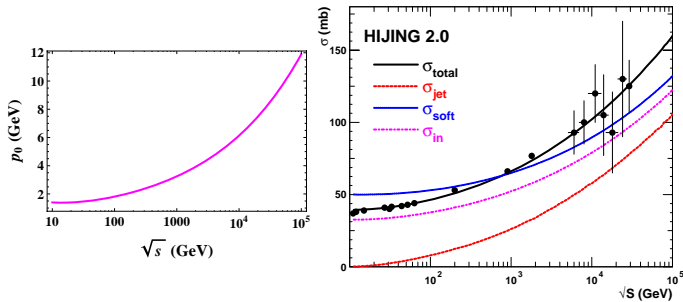
HIJING Model

- A+A collisions are decomposed into independent binary nucleon-nucleon collisions.
- In two-component model, nucleon-nucleon collisions can be divided into soft and hard processes with Pt-cut P_0 .

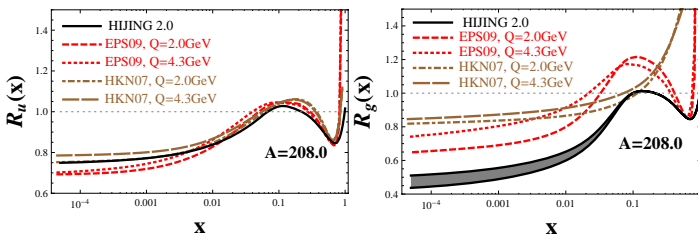


Main Parameters in HIJING and Their Update

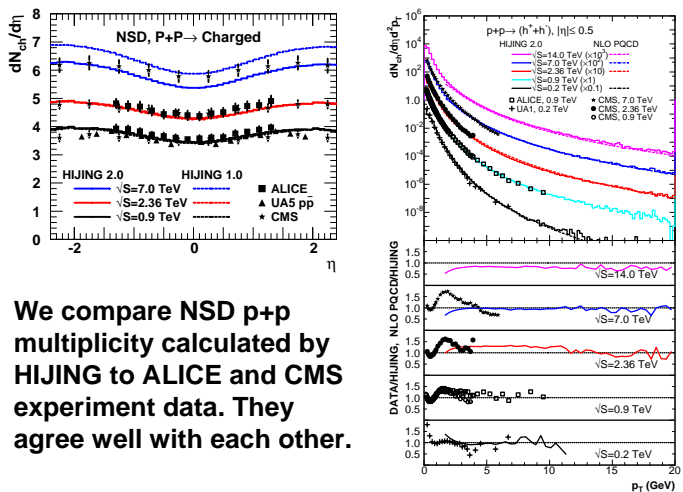
- PDFs are updated to GRV parameters.
- P_0 and σ_{soft} are updated as energy dependence.



- New shadowing parameterization with strong gluon shadowing.

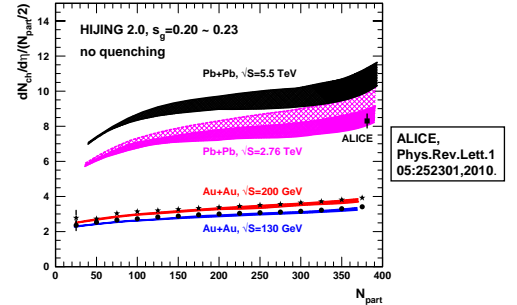


HIJING simulation for p+p collisions



We compare NSD p+p multiplicity calculated by HIJING to ALICE and CMS experiment data. They agree well with each other.

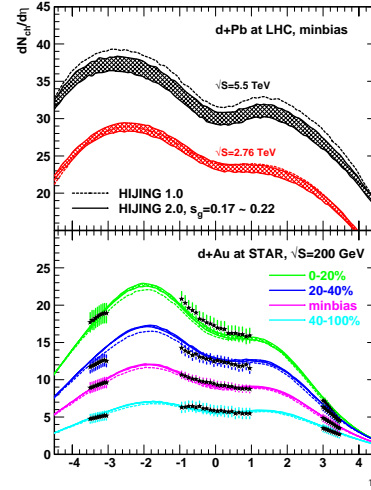
HIJING simulation for A+A collisions



- The bands come from the uncertainty of gluon shadowing, fitting to the error bar of experiment data from RHIC.
- Our prediction of multiplicity in Pb+Pb collisions at LHC is confirmed by ALICE data.
- Centrality dependence of multiplicity is reproduced well with b dependence of shadowing:

$$s(b) = s \frac{5}{3} (1 - b^2 / R_A^2)$$

HIJING simulation for d+A collisions



Reference

- X.-N. Wang and M. Gyulassy, Phys. Rev. D44, 3501 (1991).
- W.-T. Deng, X.-N. Wang & R. Xu, Phys.Rev.C83 014915 (2011).
- W.-T. Deng, X.-N. Wang & R. Xu, arXiv:1012.1514[nucl-th].

Acknowledgement

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