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Extension of Pythia8 to high energy nuclear colisions

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We report a current status of a new Monte-Carlo event generator for high energy
nuclear collisions based on the Pythia8 event generator:nPythia.
Nuclear collisions are modeled by the successive nucleon-nucleon
(NN) collisions based on the Glauber type model.
For each NN collision, we use Pythia8, but taking account
of conservation laws for a whole system.
It is found that incoherent sum of NN collision picture
based on Pythia8 describes the rapidity distributions
of produced hadrons at SPS energies in Pb+Pb,
d+Au at RHIC, and p+Pb at LHC.
However, this picture significantly overestimates
hadron yield in Au+Au at RHIC and Pb+Pb at LHC,
indicating strong nuclear suppression effects.
We introduce a simple model to simulate such
nuclear suppression effect motivated by the Color Glass Condensate (CGC).

Relevant topics

heavy ions at RHIC and LHC

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