Advances in High Energy Physics

Special Issue on

Comparing Particle Productions at RHIC and LHC Energies

CALL FOR PAPERS

The Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (BNL) has been opening a new era for high energy collisions, in which the center-of-mass energy per nucleon pair reached highly 200 GeV. At the RHIC, a lot of experimental data on proton-proton, deuteron-gold, copper-copper, and gold-gold collisions at different GeV energies have been reported. The Large Hadron Collider (LHC) at European Organization for Nuclear Research (CERN) has advanced the center-of-mass energy per nucleon pair to TeV region. Many experimental data on proton-proton, proton-lead, and lead-lead collisions at different TeV energies have been published. Correspondingly, many modeling works have been done on the data analyses at RHIC and LHC energies.

There are some common laws on particle productions in collisions at RHIC and LHC energies. Besides, more special properties are observed on the particle productions in the collisions. We are interested in comparative studies on the particle productions in collisions at RHIC and LHC energies. This is an important issue for cosmic ray physics also because more particles are produced in cosmic ray-induced collisions at higher energy. Comparative studies on the particle productions in collisions at RHIC, LHC, and higher energies are useful for high energy, nuclear, and cosmic ray physicists.

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Potential topics include, but are not limited to:

- Rapidity distributions and correlations
- Transverse momentum distributions and correlations
- Collective flow effects and correlations
- Statistical and dynamical fluctuations
- Dynamical evolution of interacting system
- Statistical behaviors of particle productions
- Extracted temperatures and other parameters
- Space structures of interacting system
- Nuclear penetrating and stopping effects
- Nuclear viscidity effects
- Nuclear shadowing effects

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