

Study of nuclear effects in small collision systems connecting proton-proton and heavy-ion collisions

Tuesday, 14 January 2020 11:00 (1 hour)

BNL Nuclear Physics Seminar, Small Seminar Room @ Physics Building

The main purpose of relativistic heavy-ion collision experiments is to understand Quark-Gluon Plasma (QGP) which is very hot and dense QCD matters produced in heavy-ion collisions. Early results from RHIC such as jet quenching and elliptic flow are supported for the formation of the QGP. In order to fully understand the properties of the QGP, it is very important to understand initial conditions before the QGP formation. Proton(deuteron)-ion collision is a control experiment to explore this kind of effects from intrinsic nucleus so called cold-nuclear-matter (CNM) effects such as modification of parton distributions, energy loss, multiple scattering, and break-up of quarkonia states. Another striking results recently observed in small systems are long-range correlations which were believed as one of properties of the QGP. Now, the studies in small systems receives much more attention than that as a control experiment of heavy-ion collisions. I will introduce the interesting results in small collision systems as well as what we can learn from the expected measurements in the future.

Presenter: LIM, Sanghoon (University of Colorado Boulder)