
**The 84th HENPIC seminar by Kai-jia Sun(孙开佳),
Texas A&M University, Aug. 22, 2019, Thursday, 10:30
am (Beijing time)**

Title: Light nuclei production as a probe of QCD phase diagram

Abstract:

Fluctuation signals of phase transitions from quark-gluon plasma (QGP) to hadronic matter can greatly advance our knowledge

of the nature of strong interaction. In relativistic heavy-ion collisions, the enhanced density fluctuations due to phase transitions (either first-order or second-order at CEP)

can cause large correlations in nucleon densities at final state, which in turn affect the productions of composite particles like light nuclei.

The light nuclei (e.g. deuteron) can only be formed within a restricted volume in phase space, therefore, they can probe local density fluctuation.

In this talk, I will demonstrate the usefulness and advantage of probing the QCD phase diagram with light nuclei produced in relativistic heavy-ion collisions.

In addition, I will discuss the recent experimental results at SPS and RHIC energies.
