

The 100th : Symposium on high-energy nuclear physics –A special 100th session of High-energy Nuclear Physics in China (HENPIC) e-Forum, April 16th, 2020 , Thursday 9:00am (Beijing time).

9:00-9:15 Welcome Address (Xin-Nian Wang and Speical Guests)

Session Chair: Xiaofeng Luo (CCNU)

9:15-9:45 Zhangbu Xu (BNL): Study of QGP at RHIC

9:45-10:15 Xiaoming Zhang (CCNU): Study of QGP at LHC

Break : 10:15-10:30

Session Chair: Qun Wang (USTC)

10:30-11:00 Elke-Caroline Aschenauern(BNL): Overview of EIC Physics

11:00-11:30 Xuguang Huang (Fudan University): Chirality, Magnetic Fields and Spin Polarization

11:30-12:00 Guangyou Qin (CCNU): Study of QGP through jet quenching

Talk abstracts :

1. Zhangbu Xu (BNL) : Study of QGP at RHIC

In this talk, I will review the major events and discoveries in the twenty years of RHIC operations and QGP studies.

2. Xiaoming Zhang (CCNU) : Study of QGP at LHC

The aim of the heavy-ion program at the LHC is to investigate the properties of the strongly-interacting matter, the quark-gluon plasma (QGP), formed in extreme conditions of temperature and energy density.

In this talk, after a brief illustration of the experimental program, an overview will be given to recent highlights on signatures and observables for exploring the QGP matter.

3. Elke-Caroline Aschenauern (BNL) : Overview of EIC Physics

Understanding the properties of nuclear matter and its emergence through the underlying partonic structure and dynamics of quarks and gluons requires a new experimental facility in hadronic physics known as the Electron-Ion Collider (EIC). The EIC will address some of the most profound questions concerning the emergence of nuclear properties by precisely imaging gluons and quarks inside protons and nuclei such as the distribution of gluons and quarks in space and momentum, their role in building the nucleon spin and the properties of gluons in nuclei at high energies. In January 2020 EIC received CD-0 and Brookhaven National

Laboratory was chosen as site. This presentation will highlight the capabilities of an EIC and discuss its status, accelerator design and the concepts for the experimental equipment.

4. Xu-guang Huang (Fudan University) : Chirality, Magnetic Fields and Spin Polarization

Heavy-ion collisions produce extremely hot quark-gluon matter with extremely strong magnetic fields and fluid vorticity. The responses of the hot quark-gluon matter to the magnetic field and vorticity exhibit novel quantum phenomena closely related to spin degree of freedom of the quarks, for example, the famous chiral magnetic and vortical effects and the spin polarization of hyperons and vector mesons. We will discuss some special properties of the magnetic field and vorticity in heavy-ion collisions and then will focus on the phenomenology of chiral magnetic effect and hyperon spin polarization in heavy-ion collisions.

5. Guangyou Qin (CCNU) : Study of QGP through jet quenching

The strongly-interacting quark-gluon plasma was one of the most important discoveries in relativistic heavy-ion collisions at RHIC and the LHC. Jet quenching, mainly characterized by parton energy loss and transverse momentum broadening, provides one of the important tools to study the properties of such hot and dense QCD matter. In this talk, I will present some recent works on jet-medium interaction, with focus on the flavor hierarchy of jet quenching, and the nuclear modifications of full jet rates and structures.
