
The 118th HENPIC seminar by Prof. Xin-Nian Wang (CCNU/LBNL), Aug. 20th, 2020, Thursday, 10:30 am (UTC+8)

Talk title: Jet tomography of hot and cold nuclear matter [1]

Speaker : Prof. Xin-Nian Wang (CCNU/LBNL)

Abstract:

When an energetic parton propagates through hot or cold nuclear matter, it will interact with the constituents of the matter. The energy loss and momentum broadening it experiences along its propagation path is the subject of intense experimental and theoretical studies. What we have learned about this within perturbative QCD has enabled us to use fast partons or jets as a tomographic tool to glean properties of the hot/dense and cold nuclear matter from experimental data of heavy-ion and electron-ion collisions. I will give a brief review on theoretical and phenomenological studies of jet tomography and discuss what we have and will learn about properties of hot and cold nuclear matter in these experiments.

[1] S. Cao and X.-N. Wang, Jet quenching and medium response in high-energy heavy-ion collisions: a review [arXiv:2002.04028 [hep-ph]].

Self-introduction:

Xin-Nian Wang, currently a professor and the director of the Institute of Particle Physics at Central China Normal University (CCNU) and Senior Scientist at the Lawrence Berkeley National Laboratory (LBNL). He was awarded Ph. D. in physics at the University of Oregon in 1989 and then went to LBNL (1989-91) and Duke University (1991-92) as a postdoctoral fellow. He was appointed as a Divisional Fellow at the LBNL in 1992, became a Senior Scientist in 1997 and was the head of the Nuclear Theory Program during 1999-2007. His main research interest is in high-energy particle and nuclear physics, especially in the search for a new form of matter known as the Quark-Gluon Plasma in high-energy heavy-ion collisions.
