

**The 135th HENPIC seminar by Dr. Fei Gao 高飞
(Heidelberg University), Mar. 10, 2021, Wednesday,
13:30 (UTC+8)**

Talk title: QCD phase structure in functional QCD method

Speaker: Dr. Fei Gao, Heidelberg University

Abstract:

QCD can be characterized by its running behavior. It shows asymptotic behavior in ultraviolet and dynamical mass generation in infrared. This feature gives QCD a rich phase structure at finite temperature and chemical potential. A functional QCD method which combines Dyson-Schwinger equations with function renormalization group method, has been recently proposed. Within this scheme, the QCD phase structure can be obtained without any modelling parameters needed, and the critical end point is then firstly predicted at $(T, \mu_B) = (110, 600)$ MeV. Here I would like to explain and analyze in detail, how to apply the functional QCD method for computing phase structure, and furthermore, the related thermal states of QCD are also analyzed.

Self-introduction:

Fei Gao was a PhD student in PKU supervised by Prof. Yuxin Liu, and then stayed in the group for 2 more years as a postdoc. He then went to Valencia University and collaborated with Prof. Joannis Papavassiliou. He is currently in Heidelberg University in collaboration with Prof. Jan M. Pawłowski as a Humboldt fellow. His research is mainly to study QCD phase structure in functional QCD method.

Presenter: Dr GAO, Fei (Heidelberg University)