Contribution ID: **39** Type: **Oral**

A novel quark pairing in sQGP induced by the non-Abelian feature of the interaction

Thursday 22 August 2024 16:30 (20 minutes)

In this talk I will show you our recent results on the quark pairing gap in sQGP by solving the coupled Dyson-Schwinger equations for quark propagator and quark gluon vertex in the Nambu-Gorkov basis which is widely applied to study the **color superconductivity**. We acquire a **quark pairing gap** at small chemical potential which is related to the **dimension two gluon condensate** and hence, its generation mechanism differs from the conventional color superconducting phase located only at large chemical potential. The gap persists up to $2-3\,T_c$ and vanishes at higher temperature. Such a quark pairing together with a second order phase transition characterizes a **partial-deconfined new phase** in sQGP and distinct from the phase with quasi quarks and gluons.

Authors: Prof. GAO, Fei (Beijing Institute of Technology); Mr LU, Yi (Peking university); Prof. LIU, Yuxin (Peking University)

Presenter: Prof. GAO, Fei (Beijing Institute of Technology)

Session Classification: Deconfinement

Track Classification: D: Deconfinement