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Quark pairing in sQGP induced by the non-Abelian feature of the interaction

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We solve 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. After considering the non-Abelian feature in the off-diagonal part of quark gluon vertex, we acquire a quark pairing gap in chiral limit above the chiral phase transition temperature Tc. The gap persists up to 2 – 3 Tc and vanishes at higher temperature. Such a quark pairing characterizes the strongly coupled quark gluon plasma phase as a new phase and distinct from the phase with quasi quarks and gluons.

Author: GAO, Fei

Presenter: GAO, Fei