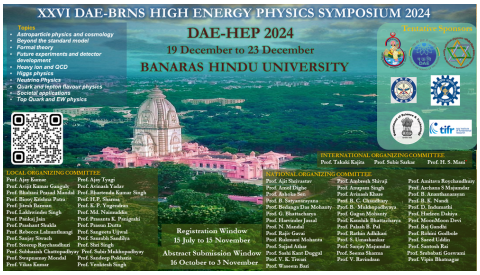

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Phase Transition in Neutron Star Cores

The region of QCD phase diagram characterized with low temperature and high baryonic density is been speculated to be found in the cores of neutron stars which are prone to phase transitions. In my present work, the transition between the chiral and diquark condensate is being studied while reproducing some numerical results. The thermodynamic grand potential of system is minimized with respect to the order parameters m and Δ to get the form of the gap equations. Using Numerical Techniques, we analyse these gap equations to study the strong competition between chiral and diquark condensate in the 2 Flavour Superconducting Phase.

Field of contribution

Theory

Authors: Dr MANDAL, Tanumoy (IISER Thiruvananthapuram); Mr KHANNA, Vibhor (IISER Thiruvananthapuram)

Presenter: Mr KHANNA, Vibhor (IISER Thiruvananthapuram)

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