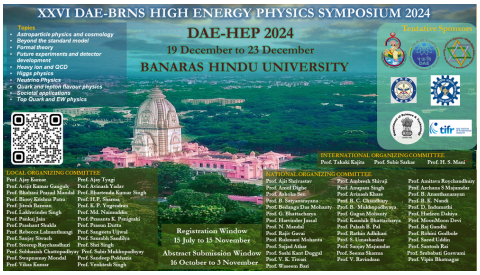

Contribution ID: **303** Type: **Postar**

Mass modification of ϕ meson in non-strange resonance matter

In this investigation, we calculate the in-medium mass of ϕ meson in hot and dense non-strange resonance matter using the effective Lagrangian framework for $\phi K \bar{K}$ interactions at one loop level. The mean-field effective approach is utilized within the chiral SU(3) hadronic mean-field model to incorporate medium modification of kaon-antikaon masses. we have considered nucleons (n, p) and delta baryons (Δ^{++}, Δ^{+}, Δ^{0}, and Δ^{-}) as the degree of freedom within the medium. To address the issue of ultraviolet divergence, we employ a dipole form factor to regulate the self-energy loop integral, and the impact of varying the cutoff mass within this form factor on the results is examined. At finite temperatures, the effective masses of ϕ mesons undergo substantial modifications due to the presence of resonance baryons within the medium. Examining the ϕ masses within the medium is anticipated to be essential for understanding experimental results from heavy-ion collisions, which may produce hot and dense matter.

Field of contribution

Phenomenology

Author: KAUR, Manpreet (Department of Physics, Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar 144008, Punjab, India)

Co-author: Dr KUMAR, Arvind (Department of Physics, Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar 144008, Punjab, India)

Presenter: KAUR, Manpreet (Department of Physics, Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar 144008, Punjab, India)

Track Classification: Heavy ion and QCD