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CORRELATION BETWEEN CONSERVED CHARGES IN PNJL MODEL

Content :

We reformulate 2+1 flavour PNJL model in two aspects. One modification is in NJL sector where we have incorporated eight-quark interaction to obtain a bound vacuum structure. The other crutial modification, which we discuss here, is in Polyakov loop sector of PNJL model where, we have incorporated the effect of unitarity of traced Polyakov loop through Van der Monde determinate. This term constrained the value of traced Polyakov loop within unity even at high temperature or chemical potential. Fluctuations of any conserved quantity in HIC can be direcly related to some kind of susceptibility using fluctuation-dissipation theorem. The correlations between conserved charges are very important to understand because these will give a physical picture of the matter formed in HIC at different thermodynamic condition.
In the present work we have computed correlation between conserved charges - baryon number (B), electric charge (Q) and strangeness (S). We have compared our leading order result with that of lattice QCD data and then predicted the behaviour of some more higher order correlation coeficients. The comparison shows that PNJL model results are reasonably close to lattice data in every situation.

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