

Equation of state of quark gluon plasma under the strong magnetic field

The current work is used to explore the structure of hot and dense system quark gluon plasma (QGP) in order to deal with the dynamics of quarks and gluons in magnetized field. Since a huge and intense magnetic field is expected to be produce at RHIC and LHC, we calculate the equation of states (EoS) in the presence of time dependent magnetic fields with the medium effects of quarks and gluons as quasiparticles. Using quasiparticle model, some important features are noticed which depend on the scales like effective quark mass, temperature and time dependent/independent magnetic field. The model results found that the behaviour of thermodynamic observables influence effectively in the presence of time varying magnetic fields. Therefore the output seems to be significant in the magnetized QGP. The results are compared with earlier results. Interestingly, a new finding results can not be ignored for the study of the evolution of magnetized QGP. The current study could be useful in explaining the physical structure of QGP with the time dependent magnetic field.

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