

INVESTIGATING THE SOUND VELOCITY IN THE MIXED HADRONIC-QGP SYSTEM FOR NUCLEONS AND PIONS IN THE HADRONIC PHASE

Amal **AIT EL DJOUDI**

Laboratoire de Physique des Particules et Physique Statistique, Ecole Normale Supérieure-Kouba
B.P. 92, 16050, Vieux-Kouba, Algiers, Algeria
amal.aiteldjoudi@g.ens-kouba.dz

Faiza **RAMDANI**

Laboratoire de Physique des Particules et Physique Statistique, Ecole Normale Supérieure-Kouba
B.P. 92, 16050, Vieux-Kouba, Algiers, Algeria

Rokaya **DJIDA**

Laboratoire de Physique des Particules et Physique Statistique, Ecole Normale Supérieure-Kouba
B.P. 92, 16050, Vieux-Kouba, Algiers, Algeria

Abstract

The present work is devoted to the investigation of the behavior of the sound velocity squared in the mixed hadronic-Quark Gluon Plasma (QGP) system, during the thermal deconfinement phase transition from a hadronic phase consisting of nucleons to a QGP phase of u, d and s quarks within their antiquarks and gluons. For this, we use a thermodynamical approach in which we investigate the pressure, the energy density and the related sound velocity squared. The computation of these quantities is done numerically, and their graphical variations are illustrated, with varying temperature and volume at zero chemical potential. The obtained results are analysed and compared to those of our previous works [1–3] carried out for a transition from a pionic hadronic phase to a QGP with u and d quarks.

References

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