V Workshop on Particle Correlations and Femtoscopy



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RHIC observes plasma viscosity and hadronic dissipation

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Reduction of the elliptic flow of charged particles has been proposed as a measure of the shear viscosity coefficient in the Quark Gluon Plasma. We complete these studies by introducing independent shear and bulk viscosities in the hadronic phase of the hydrodynamic expansion. We show that most of the effect of the reduction of elliptic flow due to dissipation comes from the hadronic phase. Only a combination of the charged particle elliptic flow results with the predictions on HBT radii, spectra and identified transverse momentum elliptic flow of identified particles (pions, protons, strange particles) indicates a non-zero viscosity coefficient eta/s=0.16 in the QGP phase.

Quantitative estimates of QGP shear viscosity should take into account late dissipative effects using viscous hydrodynamics in the hadronic phase or a hadronic cascade model.

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