



Contribution ID: 13

Type: **Theory**

## Shear Viscosity and Electric Conductivity of QGP in a Kinetic Theory Approach

*Wednesday 24 September 2014 17:20 (20 minutes)*

The study of transport coefficients of strongly interacting matter has generated a great interest in the research for Quark-Gluon Plasma (QGP) in Heavy Ion Collisions at relativistic energy.

In this work we compute shear viscosity and electric conductivity of QGP exploring a quasiparticle model settled to correctly account for the thermodynamics of Lattice QCD.

We compare Relaxation Time Approximation analytic formulas with results obtained solving numerically Relativistic Boltzmann Equation.

Quasiparticle model predicts  $4\pi \eta/s \sim 5$  at the critical temperature  $T_c$ . However, rescaling the cross-section in order to reproduce the minimum value of  $\eta/s = 0.08$ , it is possible to describe simultaneously recent Lattice results on electric conductivity.

Another interesting quantity is the shear viscosity to electric conductivity ratio which could give us information about the quark to gluon scattering rates or relaxation times  $\tau_g/\tau_q$ .

**Author:** PUGLISI, Armando

**Co-authors:** PLUMARI, Salvatore (University of Catania (Italy)); GRECO, Vincenzo (University of Catania)

**Presenter:** PUGLISI, Armando

**Session Classification:** Session 6

**Track Classification:** Relativistic hydrodynamic and collective phenomena