

First Lecture: QCD under extreme conditions

- 1- The QCD phase diagram: Lattice results
- 2- Observable consequences

Second lecture: The heavy ion collisions and the search for the QGP

- 3- The space-time picture of a HI collision and the signals of the QGP
- 4- Hard probes in heavy ion collisions as a general framework to study medium properties: jets in heavy ion collisions.
- 5- The lessons from SPS and RHIC data and the hopes for the LHC

References

Introductory lectures:

RHIC physics: The Quark gluon plasma and the color glass condensate: Four lectures, Larry McLerran, hep-ph/0311028

Lattice results:

Thermodynamics and in medium hadron properties from lattice QCD. F. Karsch, E. Laermann, hep-lat/0305025

Lattice QCD at finite temperature and density. M.P. Lombardo, hep-lat/0509180

Signals: Jets in heavy ion collisions Gluon radiation and parton energy loss. A. Kovner and U.A. Wiedemann, hep-ph/0304151

Rhic results from LHC perspectives. Carlos A. Salgado, hep-ph/0510062