

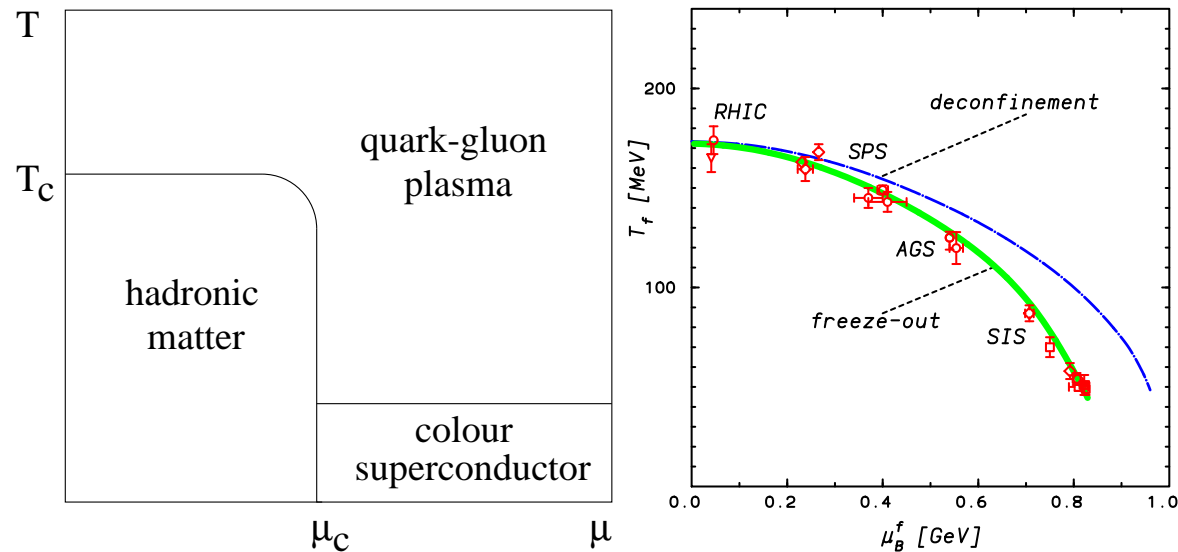
F. P.

RM31

Fisica delle collisioni di ioni pesanti di altissima
energia e Quark Gluon Plasma

Pavia, 3 Maggio, 2007

QCD predicts a phase transition under extreme conditions of
Temperature/energy density



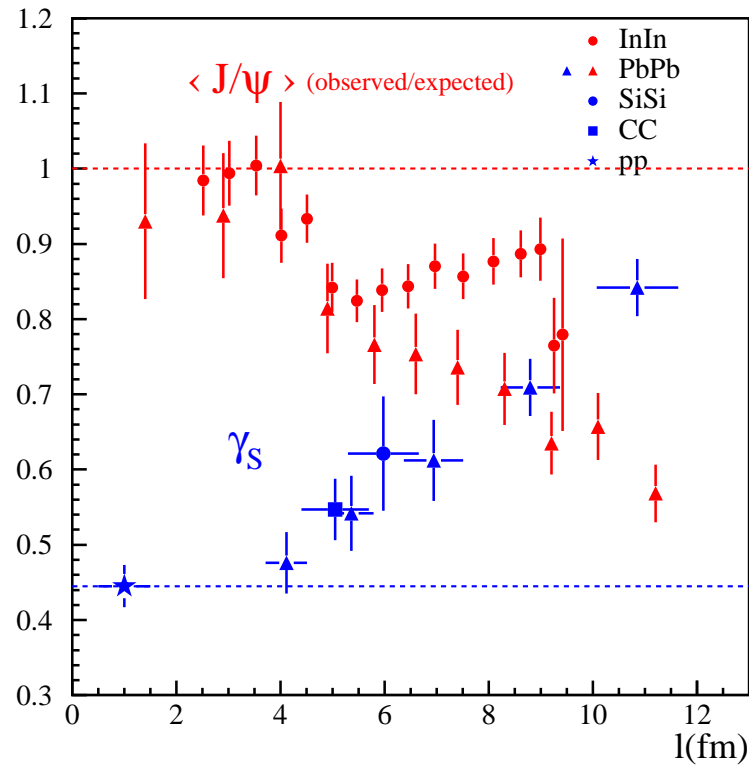
Where do we expect the existence of QGP?

- early universe
- within the supernova core
- in high energy heavy ion collisions (the easiest place to study QGP)

Heavy Ion Collisions at SPS

Correlating J/ψ suppression with strangeness enhancement

F. Becattini, L. Maiani, F.P., A.D. Polosa and V. Riquer, Phys. Lett. **B632** (2006) 233



Transverse dimension of the fireball l is the optimal quantity to show the onset of both phenomena (most probably due to QGP)

Work in progress (in collaboration F. Becattini) on elliptic flow and azimuthal asymmetries in the hadronic emission (RHIC and LHC)

- main idea: the angular momentum transferred to the fireball by the collision introduces azimuthal asymmetries
- the effect has not been calculated yet
- consequence: net polarization of the emitted hadrons, which could be measured at LHC
- 2007:
 - participation to the GGI workshop **High Density QCD**, January 14th - March 9th, Florence
 - participation to the CERN Theory Institute: **Heavy Ion Collisions at the LHC**, May 14th - June 8th