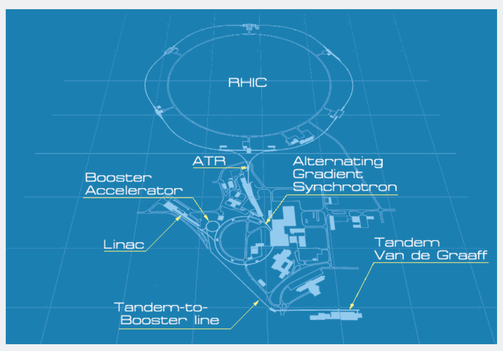
The PHENIX experiment at the Relativistic Heavy Ion Collider



12 Countries, 57 Institutions, 460 participants (as of July 2002)

a fraction of the PHENIX collaboration

(list as of July 2002)

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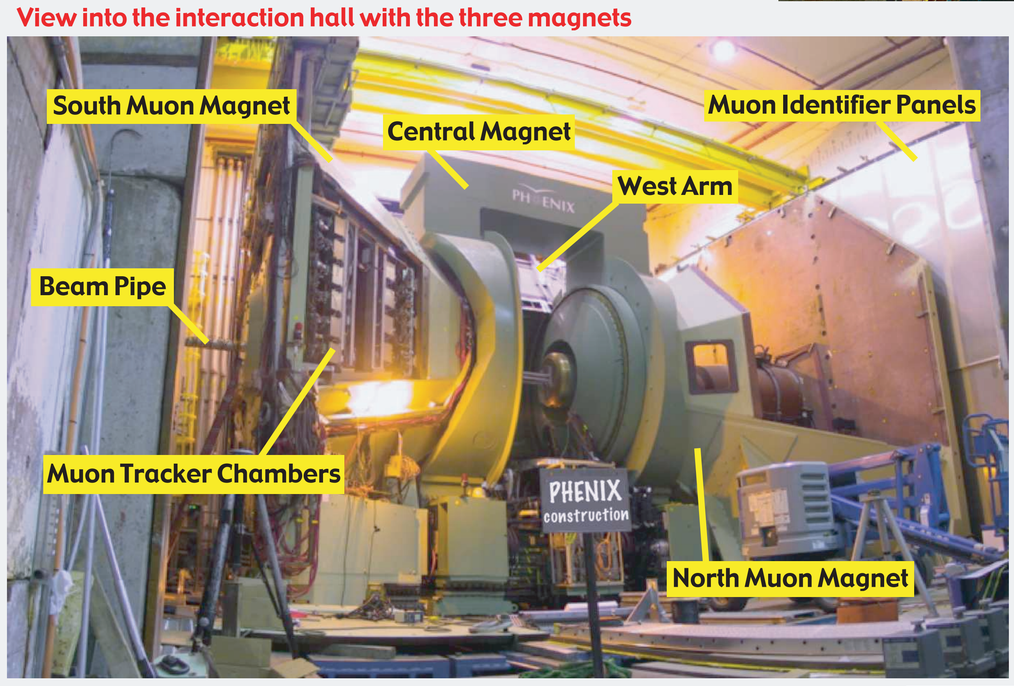
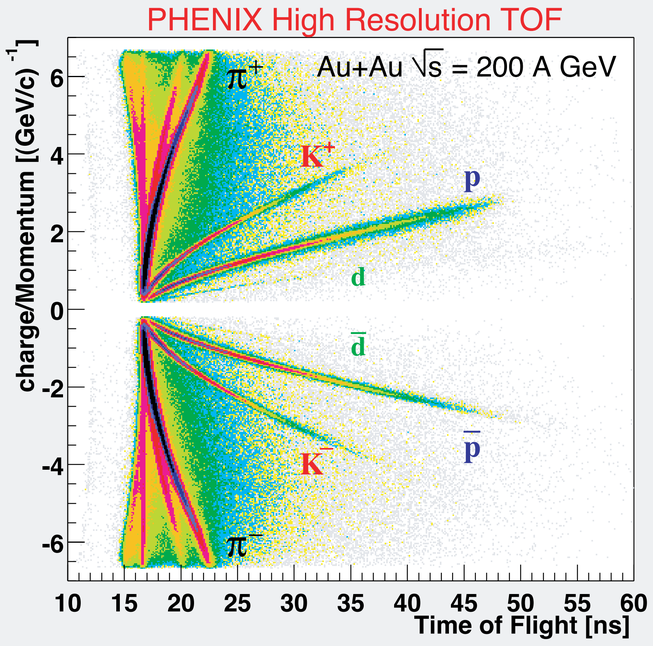
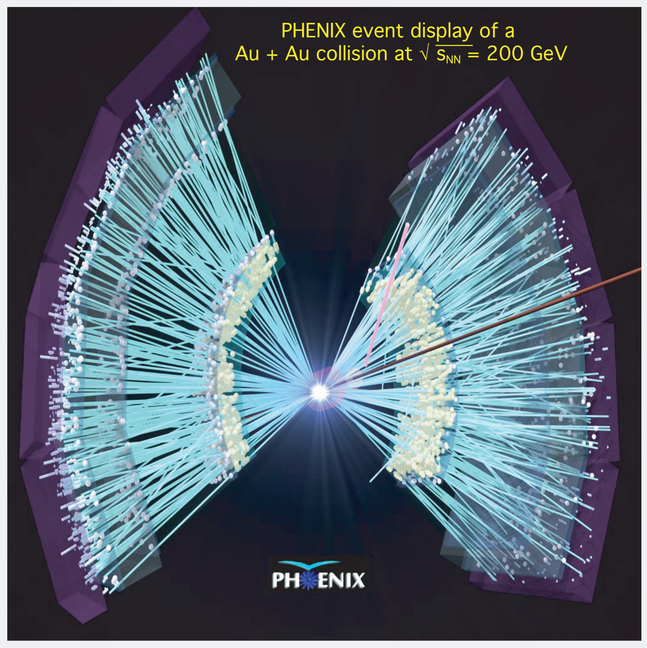
View into the interaction hall with the three magnets

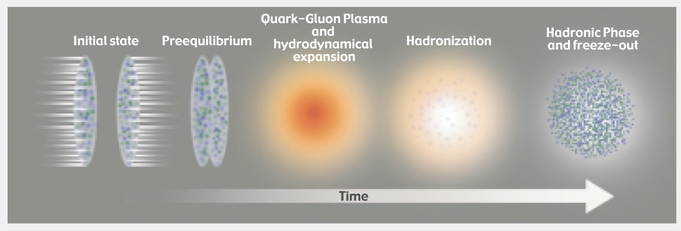


One of the central arm detector systems (East Arm)

PHENIX High Resolution TOF

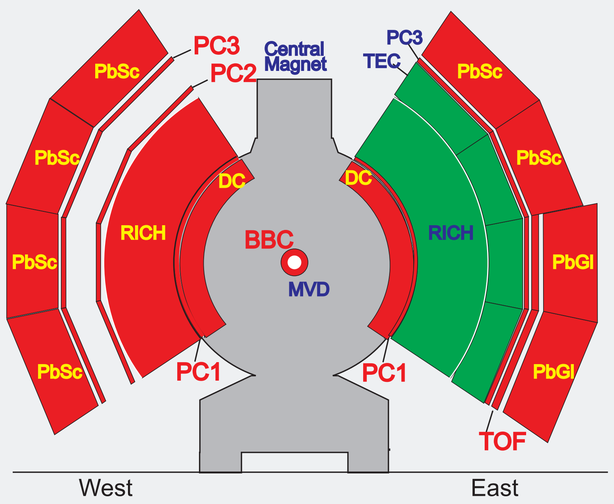


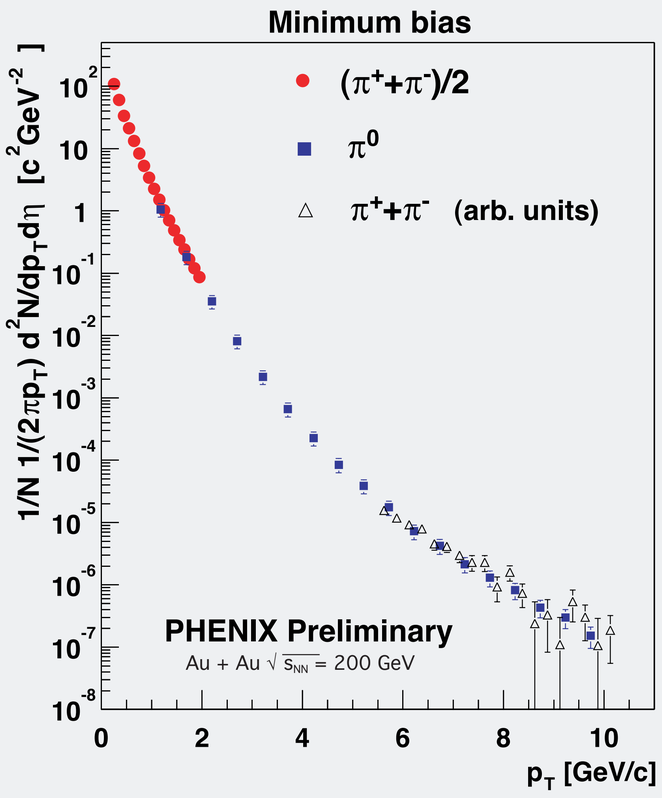


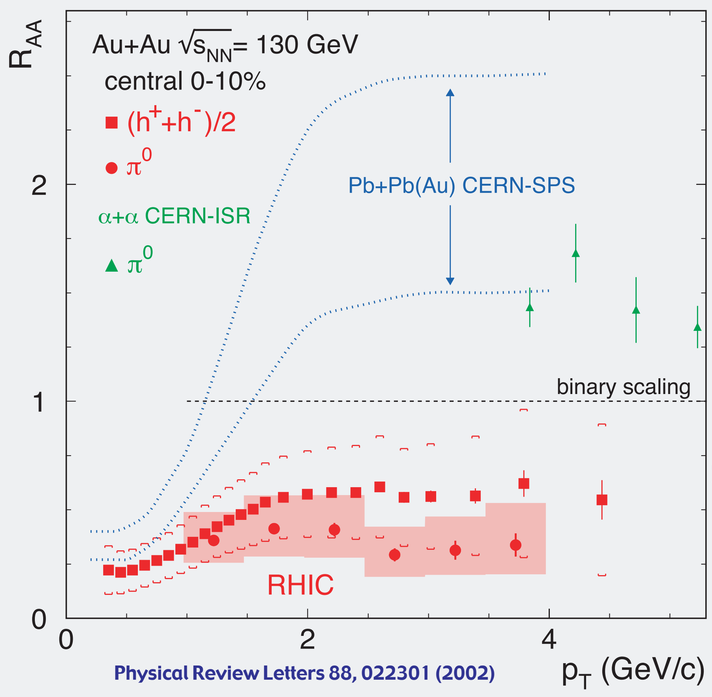


In this schematic illustration two gold nuclei collide and give rise to thousands of quark and gluons, which then equilibrate into a hot cauldron of matter, the quark-gluon plasma. As this plasma cools, it condenses into the ordinary particles seen by the detectors.

Charged and neutral pion yields as a function of transverse momentum (p_T). Nearly all detectors in the two central arms (indicated in red in the figure below) were involved in these three independent analyses.







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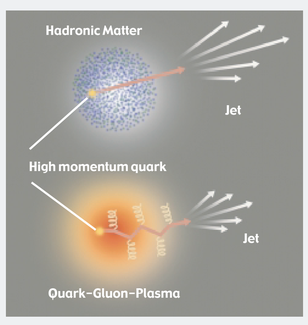

Plotted as a function of transverse momentum (p_T) is the ratio, R_{AA}, of the measured yield of charged and neutral pions in Au Au collisions to the yield that would be expected based on an extrapolation of proton-proton collisions. The PHENIX results and measurements at lower energies at the CERN SPS are qualitatively different. At RHIC higher p_T seems to be depleted, which was predicted assuming an energy loss of partons in dense matter.

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