



INVITATION

to a
TALK
by

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The wondrous world of quantum liquids of quarks and gluons - results from ALICE

The theory of strong interaction, quantum chromodynamics, predicts at high temperature and density a new state of matter where the confinement of quarks and gluons is lifted. This state, the quark gluon plasma (QGP) existed in the early universe from time scales of nanoseconds until about 10 microseconds after the big bang. Experiments at accelerators have started nearly 25 years ago in order to recreate this state of matter. Collisions of the heaviest atomic nuclei are considered the ideal tool for these studies. The program started with fixed target experiments at the Brookhaven AGS and the CERN SPS. At the end of the SPS program in 2000 enough evidence had been gathered to conclude that indeed a new non-hadronic state of matter had been created in the experiments. After the start of the heavy ion collider RHIC in Brookhaven in the summer of 2000 the evidence has been consolidated over the past 10 years and first properties of the QGP have been determined.

In November/December 2010 collisions of lead nuclei were studied for the first time at the LHC, followed by a second campaign at the end of 2011. This talk will present a selection of experimental results of ALICE from, put them into the context of the RHIC results and theoretical interpretation. It appears that these ultrahot systems show in some respects dramatic similarity to the behavior of the coldest systems one can produce and study in the laboratory, i.e. cold quantum gases.

Friday, November 30th, 2012
10:00 s.t.

Ludwig-Boltzmann-Hörsaal, Ground Floor
Strudlhofgasse 4, 1090 Wien

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