

## HK 63: Hauptvorträge VII

Time: Friday 11:45–12:45

Location: HS1

**Invited Talk**

HK 63.1 Fri 11:45 HS1

**Overview of the RHIC Beam Energy Scan at STAR** —  
 ●ALEXANDER SCHMAH — Lawrence Berkeley National Laboratory,  
 Berkeley, USA

The main goal of the RHIC Beam Energy Scan (BES) is the exploration of the QCD phase diagram to the region of an expected 1<sup>st</sup> order phase transition between the Quark Gluon Plasma (QGP) and the hadron gas phase. In the year 2010, the first part of the BES program was successfully completed. Data sets include the reaction system Au+Au at  $\sqrt{s_{NN}} = 7.7, 11.5, \text{ and } 39 \text{ GeV}$ .

For the first time in 2010, the STAR multi-purpose detector system at RHIC was equipped with a fully installed time-of-flight barrel, which covers  $2\pi$  in the azimuthal angle and  $\pm 0.9$  in pseudorapidity. Furthermore the material budget of the tracking system was reduced by removing the silicon vertex tracker in the inner part of the detector. These changes enable STAR to identify charged particles up to high momenta and reduce background due to gamma conversions, respectively. The proposed goal at STAR was achieved for 7.7 GeV with 5 million recorded Au+Au events, while even more data have been collected for the other two beam energies. Various analyses have been started to find a signature for the phase transition or the critical point. These include elliptic and directed flow, fluctuations as well as di-lepton and hadron spectra. In this talk, an overview of the BES run is given and first results of the data analyses are presented.

**Invited Talk**

HK 63.2 Fri 12:15 HS1

**Photons and Jets from the First Year of ALICE** — ●ANA  
 MARIN — GSI, Darmstadt, Germany

In order to study the Quark-Gluon Plasma (QGP) formed in heavy-ion collisions, direct photons are particularly interesting because they directly probe the high temperature and high density phase of these collisions. Direct photons have to be isolated from the main source of background photons, i.e. the decay of hadrons (mainly  $\pi^0$ 's and  $\eta$ 's) after the QGP phase. To study the full evolution of the produced medium the usage of hard probes is also of particular interest. Moreover, the cross section of hard probes are increasing by large factors at LHC energies compared to RHIC or SPS. Therefore, full jet reconstruction would be exploited to extract quantitative information from the medium properties created in heavy-ion collisions by comparing results in p+p and Pb+Pb collisions.

During the year 2010 the CERN LHC delivered p+p collisions at  $\sqrt{s} = 7 \text{ TeV}$  and Pb+Pb collisions at  $\sqrt{s_{NN}} = 2.76 \text{ TeV}$ , the highest energy ever achieved. The p+p runs are essential to obtain important reference data for heavy-ion runs as well as a test of pQCD. In this talk we will present the measurement of  $\pi^0$  and  $\eta$  mesons and the status of the direct photon analysis in p+p collisions at 7 TeV. Moreover results in p+p collisions from full jet reconstruction, namely raw jet-production rates and more specific momentum distribution of tracks within jets and the single track correlation to jets which is sensitive to medium effects of the QGP will be shown. First insides from Pb+Pb collisions will also be presented.