

HK 1: Eröffnung und Hauptvorträge

Zeit: Montag 8:45–10:30

Raum: 1B/C

Begrüßung Mo 8:45 - 9:00

Hauptvortrag HK 1.1 Mo 9:00 1B/C
The Spin-Structure of the Nucleon — ●ELKE - CAROLINE ASCHENAUER — JLab, Newport News, VA, USA

The question after the individual parton (quarks and gluons) contributions to the spin of the nucleon is even after 20 years of experimental efforts not yet solved. After several very precise measurements in polarized deep inelastic scattering it is clear, that the spin of the nucleon can not be explained by the contribution of the quarks alone. This is affirmed by the newest results from HERMES and JLAB on the inclusive spin structure function g_1 and on the individual contributions from the different quark flavors from semi-inclusive deep inelastic scattering data. HERMES latest results on the gluon polarization by isolating the photon gluon fusion process in semi-inclusive deep inelastic scattering; will be discussed. The clear experimental evidence of exclusive reactions, especially DVCS, allows in the formalism of generalised parton distributions the study of an other component of the nucleon spin the orbital angular momentum. The most recent results on indications of the size of the orbital angular momentum of quarks will be presented. An outlook on the impact of the JLab 12 GeV upgrade on the spin structure of the nucleon will be given.

Hauptvortrag HK 1.2 Mo 9:30 1B/C
Dielectron production in elementary and heavy ion collisions with HADES — ●PIOTR SALABURA for the HADES-Collaboration — Jagiellonian University, Krakow, Poland — GSI, Darmstadt, Germany

HADES is a second generation experiment operated at GSI Darmstadt with the main goal to study dielectron production in proton, pion and heavy ion induced reactions. The first part of the HADES mission is to reinvestigate the puzzling pair excess measured by the DLS collaboration in C+C and Ca+Ca collisions at 1 AGeV. For this purpose dedicated measurements with C+C system at 1 and 2 AGeV were performed [1]. Pair excess above a cocktail of free hadronic decays has been extracted and compared to the one measured by DLS. Furthermore,

the excess will be confronted with predictions of various model calculations. These calculations suffer from incomplete knowledge of some elementary processes, most importantly Dalitz decays of baryonic resonances (mainly $\Delta(1232)$) and NN bremsstrahlung. In order to shed more light on these processes p-p and d-p collisions have been investigated. Preliminary results from these experiments will be presented and discussed. The second important part of the HADES physics programme is high resolution spectroscopy of the vector mesons(ρ/ω) region. Such investigations have been started with Ar+KCl collisions at 1.75 GeV and p-p at 3.5 GeV. High statistics data sample (≈ 150000 pairs) collected for Ar+KCl has already been analyzed. First results will be presented and compared to model predictions.

[1] G. Agakichiev et al. (HADES Collaboration), Phys. Rev. Lett. 98 (2007)052302

Hauptvortrag HK 1.3 Mo 10:00 1B/C
Die Fabrik für radioaktive Ionenstrahlen am RIKEN — ●HEIKO SCHEIT — RIKEN Nishina Center, RIKEN, Japan

Die Fabrik für radioaktive Ionenstrahlen[1] am RIKEN in Japan wurde Ende 2006 nach über 9-jähriger Aufbauphase in Betrieb genommen. Mit insgesamt 3 neuen Ringzyklotronen—die bestehende Anlage dient als Injektor—können jetzt Primärstrahlenergien von 440 MeV/u für leichte und 350 MeV/u für Schwerionen erreicht werden.

Diese hochenergetischen Strahlen werden nach Projekttilfragmentation stabiler Strahlen oder Uran-Kernspaltung mittels des supraleitenden Fragmentseparators BigRIPS[2] in intensive Sekundärstrahlen umgewandelt.

Vielseitige experimentelle Einrichtungen befinden sich in Planung, im Bau oder existieren bereits. Ich werde die neue Anlage und die wichtigsten Experimente vorstellen und über erste Erfahrungen mit dem Betrieb sowie über die ersten experimentellen Resultate berichten.

[1] Radioactive Ion Beam Factory, RIBF

[2] Big RIKEN Projectile fragment Separator