

Plenarvortrag

PV I Mo 9:15 Plenarsaal

Status of the FAIR Project — ●PAOLO GIUBELLINO — FAIR & GSI, Darmstadt

The construction of the Facility for Antiproton and Ion Research FAIR is progressing well. FAIR is one of the European flagship facilities for basic science in the coming decades and will become operational around 2025. The unique accelerator and experimental facilities will allow for a large variety of unprecedented fore-front research in physics and applied science. The science program of FAIR is structured along four research pillars: NUSTAR, CBM, PANDA and APPA. In the field of nuclear structure, nuclear astrophysics and nuclear reactions, the FAIR accelerator with the versatile NUSTAR instrumentation will give access to the yet unknown region of r-process path nuclei at and beyond

$N=126$ and thereby provide stringent constraints for our understanding of the nucleosynthesis of the heaviest nuclei. In the field of nuclear and hadronic matter physics, CBM will offer unique conditions for a comprehensive study of QCD matter at the highest net-baryon densities achievable in the laboratory. In the field of hadron physics, PANDA opens up excellent research opportunities for high-precision systematic measurements in hadron spectroscopy and hadron structure. In addition FAIR will also allow for novel precision experiments in atomic physics as well as for tests of fundamental symmetries and interactions in nature. Last but not least, FAIR, with its large variety of ion beam species, energies and intensities will offer broad opportunities for a rich applied research program, APPA. The progress of the FAIR realization and the status as well as first results from the intermediate research program FAIR phase 0 at GSI will be presented.