CNS / 独立行政法人理化学研究所 仁科加速器研究センター　共催
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CNS / RIKEN Nishina Center for Accelerator Based Science
The 24th RIBF Nuclear Physics Seminar

The high baryon density CBM experiment and other QCD related research activities at the future FAIR facility in Germany

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A future Facility for Antiproton and Ion Research (FAIR) is planned at GSI in Darmstadt, Germany, which will be a considerable upgrade of the existing facility and at the same time transform GSI to an international research center. The new accelerator complex will deliver high density ion beams up to 35 GeV/nucleon for experiments with primary beams of ions up to uranium and with secondary (radioactive) ion beams and antiprotons. FAIR will open up unique opportunities for a broad spectrum of research programs comprising a large spectrum of QCD studies with cooled beams of antiprotons (PANDA), nucleus-nucleus collisions at highest baryon densities (CBM), nuclear structure and astrophysics investigations with nuclei far off stability (NUSTAR), but also plasma physics, atomic and material science as well as radio-biological studies.

After a brief overview to this facility, I will introduce experiments planned by the NuSTAR (Nuclear STructure, Astrophysics and Reactions) community, the PANDA (antiProton ANnihilation at DArmstadt) experiment and then concentrate on CBM, the Compressed Baryonic Matter experiment, aiming at the exploration of the QCD phase diagram at highest baryon densities.

The seminar will be given in English

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