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First experiments with R3B

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The R3B experimental facility comprises a versatile setup for kinematical complete measurements of Reactions with Relativistic Radioactive Beams (R3B) at the FAIR facility at the high-energy branch of the Super-FRS. The R3B international collaboration has completed an extended R&D and prototyping phase and started construction of the final detector components. The central part, a super-conducting large-acceptance dipole magnet with high field integral, is almost completed and will be delivered to GSI and installed beginning of 2015 in the present experimental hall Cave C. The detection systems are added and integrated step-wise in Cave C and will be ready for commissioning and first experiments already in 2017 when the SIS18 will start-up operation again. The completed and fully commissioned setup will be transferred to the FAIR experimental hall in 2019, when the construction of Super-FRS will be advanced. The combination of high-energy beams with a versatile and complete detection system for high-resolution measurements is basis for a unique physics program with radioactive beams to investigate properties and reactions of neutron-proton asymmetric nuclei, which will explore science questions related to nuclear structure, astrophysics, reactions, and nuclear matter. The presentation will give a brief overview of the R3B physics program and it's staging towards FAIR and at FAIR.

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