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Plan for nuclear physics experiments at RAON in Korea

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The new Rare Isotope Science Project (RISP) has been launched in Korea in 2011. The core of RISP is to design and construct the rare isotope accelerator, RAON, and the experimental facilities. For the nuclear physics experiments at RAON, the recoil spectrometer and the large-acceptance multipurpose spectrometer are being designed.

The KOrea Broad acceptance Recoil spectrometer and Apparatus (KOBRA) is dedicated to the nuclear structure and the nuclear astrophysics with low-energy beams up to 18.5 MeV/nucleon. It is a double achromatic focusing system with the two Wien filters and many magnets. The KOBRA will study the structure of exotic nuclei near the drip lines and various astrophysical processes such as r-, s-, and rp-processes, using cross sections, the transfer reactions, and the decay measurements.

The Large-Acceptance Multipurpose Spectrometer (LAMPS) is dedicated to study the properties of nuclear matter. One of the major goals for LAMPS is to investigate the nuclear equation of state and the symmetry energy in wide range of the beam energy. For this purpose the charged hadrons, nuclear fragments, and neutrons should be measured precisely in large phase space. The LAMPS intends to achieve this requirement by combining the solenoid and dipole magnet spectrometers.

This presentation will provide an overview of the objects for the nuclear physics program at RISP. The status of the KOBRA and LAMPS spectrometers with their future prospects will be also given.

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