

Low-energy nuclear physics opportunities in Korea

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The radioactive ion (RI) beam accelerator facility called RAON is under construction in Korea.

It will produce RI beams by the ISOL and In-flight methods as well as stable beams. One of the experimental facilities called KoBRA is expected to carry out nuclear astrophysics and nuclear structure experiments in the early phase of RAON. Several experiments using both stable and RI beams of tens of MeV/u are considered for nuclear astrophysics and nuclear reaction studies. Several detector systems and experimental devices are being developed by the IBS Center for Exotic Nuclear Studies (CENS). One of the main detectors is an active target TPC detector called ATOM-X. It will be used for low energy experiments, such as alpha elastic scattering and the (a,p) reaction related to nuclear astrophysics. We are also constructing a gas target and silicon detector systems that can be used to study nuclear reaction and structure studies by (p,d), (p,t), (d,p), (3He,t) etc. HPGe clover detectors and their support structure for gamma-ray spectroscopy are under construction. We are also developing a Wien filter, which will be installed in the KoBRA beam line. Status of the RAON accelerator and research activities at CENS will be discussed.

Experimental study on nuclear physics

Presenter: Prof. HAHN, Kevin (CENS, IBS)

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