

Exotic Nuclei and the Universe

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abstract:

Our understanding of the Universe is largely based on the fundamental properties of many nuclei. Nuclear reactions in stars are responsible for energy generation and nuclear synthesis. Important stellar nuclear processes such as r-process and rp-process involve with exotic nuclei, which have very short half-lives. Korea is currently constructing the radioactive ion beam accelerator facility called RAON. This new facility is expected to carry out nuclear astrophysics experiments for understanding explosive nuclear synthesis in stellar sites such as X-ray bursts and novae as well as the origin of heavy elements in the r-process. Current activities and prospects of nuclear astrophysics in Korea using RI beams will be discussed.