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Studying astrophysical reactions with low-energy RI beams - the projects at CRIB

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The radioactive isotopes (RI) seldom exist on the earth, but they
can be created in the universe and often play an important role in explosive stellar sites,
contributing to the nucleosynthesis, stellar evolution and thermal dynamics.

Several experimental projects at CRIB [1-3], a low-energy RI beam separator operated by Center for Nuclear Study, the University of Tokyo and located at RIBF of RIKEN Nishina Center, are discussed as the examples of the low-energy RI beam creation and RI-involved astrophysical reaction study.
Recent experiments, including a resonant scattering measurement with TTIK for the ^{22}Mg(α, p) reaction relevant in X-ray bursts [4], the study on ^{7}Be destruction reaction in the Big-Bang Nucleosynthesis with the THM [5], and the latest study on the (α, p) reactions in stellar environments are introduced and discussed.

References
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