

## **Structure of exotic nuclei and understanding of the rp-process**

Abstract:

New phenomena, such as nuclear halo, inversion of nuclear shells and exotic decay modes have been discovered in nuclei removed from the valley of stability. Understanding of these phenomena requires development of new theoretical approaches. Detailed experimental data on the structure of exotic nuclei is crucial for this development. Exotic nuclei also play an important role in understanding of explosive nucleosynthesis processes in stellar environment. The experimental methods to study exotic nuclei and to measure the astrophysically important reaction rates (with emphasis on the rp-process) will be discussed.