

Radioactive Beam Experiments for Nuclear Astrophysics

H. Schatz

Dept. of Physics and Astronomy and National Superconducting Cyclotron Laboratory. Michigan State University, MI 48824, USA

Unstable nuclei play a critical role in a number of astrophysical scenarios, like accreting neutron stars, Novae, Supernovae, or neutron star mergers. Revolutionary progress in astronomy has been made over the last years providing unprecedented quantitative data on these scenarios, but also raising new questions. Interpretation of these astronomical data and finding answers to the open questions requires similar advances in nuclear physics. Experiments with radioactive beams have to be an important part of this effort. I will give an overview of recent astronomical results and the associated open astrophysical questions that require improved data on unstable nuclei to be solved. I will also outline the necessary experiments that need to be done at existing or planned radioactive beam facilities.

