

The Science of Radioactive Ion Beams

B. Sherrill, NSCL, East Lansing, Michigan

Abstract

The primary intellectual challenge of nuclear physics is to understand the nature of strongly interacting matter and how the features of nuclear many-body systems derive from the fundamental forces and properties of their constituent parts. In nuclear science, interestingly, atomic nuclei present one of the most difficult problems to address. However, a comprehensive understanding of nuclear properties is essential to our ability to model the chemical evolution of the Universe, use nuclei for tests of the fundamental symmetries of nature and assess any number of nuclear technologies. Until recently, the fact that experiments had to be carried out with the limited range of stable isotopes found in nature has severely constrained our understanding. However, the current and next generation of radioactive ion beam facilities will remove this constraint. This talk will endeavor to summarize the most important opportunities made available with the next generation of radioactive ion beam facilities.

NO SUBMISSION RECEIVED