



独立行政法人理化学研究所 仁科加速器研究センター  
第90回RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science  
The 90th RIBF Nuclear Physics Seminar

## Overview of BigRIPS In-flight Separator at RIBF: Production and Identification of RI Beams Using In-Flight Fission of a 345 MeV/u $^{238}\text{U}$ Beam

Dr. Toshiyuki Kubo ( Research Instruments Group, Nishina Center )

The BigRIPS superconducting in-flight separator has been designed with large acceptance and a two-stage structure in order to enlarge the accessible region of exotic nuclei to a large extent at RIBF. The large acceptance allows efficient production of RI beams by using not only projectile fragmentation of heavy ion beams but also in-flight fission of a uranium beam. The two-stage structure allows delivery of tagged RI beams and/or use as a two-stage separator. The first stage of the BigRIPS separator is used to produce and separate RI beams with a wedge energy degrader, while the second stage works as a spectrometer to identify the RI beams. The second stage has been designed with Brho resolution high enough to identify RI beams without measuring total kinetic energy. In the two-stage separator mode, another energy degrader is employed at the second stage in order to further purify the RI beams. In this talk I present the overview of the BigRIPS separator, including the production and identification of RI beams using in-flight fission of a  $^{238}\text{U}$  beam at 345 MeV/u. Searches for new isotopes and new isomers using the  $^{238}\text{U}$  beam are also outlined in order to demonstrate the capability of the RI beam production using the BigRIPS separator.

Jan. 19(Tue), 2010 13:30 -  
Nishina Hall, RIKEN

*The seminar will be given in English.*

*Contact: RIBF Nuclear Physics Seminar Organizer  
seminar@ribf.riken.jp  
<http://ribf.riken.jp/~seminar>*