



Contribution ID: 33

Type: **Plenary Contribution**

Present status of Rare-RI Ring project in RIKEN RI Beam Factory

Wednesday, 12 October 2011 11:50 (25 minutes)

We would like to present current status of Rare-RI Ring Project in RIKEN RI Beam Factory (RIBF). Rare-RI Ring consists of long injection line, septum magnets, fast-response kicker magnet and cyclotron-like storage ring. Main purpose of the Rare-RI Ring is to measure mass of unstable nuclei related to R-process, which are located very neutron rich side. Basic idea of the Rare-RI Ring and principle of mass measurements have been already described in Ref.[1]. SHARAQ spectrometer [2] will be used as a part of the injection line. The cyclotron-like storage ring will consist of recycling 24 sector magnets used in heavy-ion synchrotron TARNIL. In the half of the sector magnets, we will put n-value and trim-coils to adjust isochronous field. According to our simulation, expected isochronicity is less than 10^{-6} with large emittance of the beam ($\sim 50 \pi$ -mm-mrad). Individual injection [3] is another important issue for the Rare-RI Ring. To perform the individual injection, fast response in kicker magnet is necessary. Very recently, we succeeded to excite the kicker magnet in ~ 400 ns after we improved response of cyclotron trigger. This fast response allows us to inject RI beams with 200 A MeV, that is almost yield optimum energy for RI beams in RIBF.

[1] Y. Yamaguchi et al., NIMB 266 (2008) 4575.

[2] S. Shimoura, NIMB 266 (2008) 4131.

[3] I. Meshkov et al., NIMA 523 (2004) 262.

Primary author: Prof. OZAWA, Akira (Institute of Physics, University of Tsukuba)

Presenter: YAMAGUCHI, Yoshitaka (RIKEN Nishina Center)

Session Classification: Accelerator physics and detectors II

Track Classification: Accelerator Physics