

Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Ion optical studies in the high resolution beam line and the SHARAQ spectrometer YOSHIKO SASAMOTO, TOMOHIRO UESAKA, TAKAHIRO KAWABATA, G.P.A. BERG, KOHSUKE NAKANISHI, SHUMPEI NOJI, HIROYUKI TAKEDA, SUSUMU SHIMOURA, HIDEYUKI SAKAI, TOSHIYUKI KUBO, SHARAQ COLLABORATION — The SHARAQ spectrometer is designed to achieve a resolving power of $p/\delta p \sim 15000$ and a high angular resolution $\delta\theta \sim 1$ mrad with RI beam at RIBF. To avoid loss of energy resolution due to the momentum spread of RI beams, the dispersion matching technique is applied. In the commissioning run in March and May 2009, we have investigated ion-optical properties of the SHARAQ spectrometer and the high resolution beam line. We measured the first order matrix elements of the beam line and the SHARAQ spectrometer using the primary beams. The resolving power D/M of the SHARAQ spectrometer is 14.7 m, which corresponds to the design value of the resolving power when the beam spot size is assumed to be 1 mm. Based on the first order elements, the beam line was tuned to be dispersion-matched to the spectrometer. In the tuning, we used correlations of beam trajectories at different focal planes. As the results, we have partially achieved the dispersion matching for the lateral and angular direction simultaneously. At present, the resolving power of ~ 8000 is achieved. The tuning method and the obtained results in the commissioning will be presented.

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Date submitted: 01 Jul 2009

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