Ion Optics Simulation for Fragment Separator YOSUKE KAWADA,
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University of Science — We have developed a Monte-Carlo simulation code for
unstable-nuclear beam experiments using a fragment-separator. This code primarily
aims at calculating beam traces in the fragment separator BigRIPS and ZeroDegree
Spectrometer (ZDS) at RIBF(RIKEN RI-Beam Factory). This code uses externally
given transfer-matrices of ion optics such as an output of COSY Infinity[1]. We
have applied this code to recent campaign of experiments using ^{48}Ca at 345MeV/u
as primary beam. In the experiments, two modes of ion optical settings , namely
"Standard" and "High Brho" modes were used. The former is an ordinary used
starndard setteing, which has a limit in the maximum rigidity ($B\rho < 9.2$Tm). On
the other hand, the "High Brho" setting has been developed for a secondary beam
with higher rigidity, such as for very neutron rich nuclei ^{22}C (A/Z=3.67). In this
talk, we compare properties of these two optics settings and evaluate beam traces,
emittances, and transmissions.

[1] K. Makino, M. Berz Nucl. Instr. Meth. A 558 (2005)

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