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ZeroDegree spectrometer at RIKEN RI Beam Factory
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YANAGISAWA, KANENOBU TANAKA, RIKEN Nishina Center — At RI Beam
Factory (RIBF) [1] at RIKEN Nishina Center, a variety of fast rare isotope (RI)
beams are produced using the BigRIPS in-flight separator [2] for studies of exotic
nuclei. The beam line following BigRIPS is designed to work as a forward spectrome-
ter named ZeroDegree, so that it can be used for reaction studies with RI beams. The
ZeroDegree spectrometer consists of two dipoles and six superconducting quadrupole
triplets, of which designs are essentially the same as those of BigRIPS. It analyzes
and identifies projectile reaction residues, often in coincidence with gamma rays,
and can be operated in different optics modes, depending on experimental require-
ments. The ZeroDegree spectrometer has recently been commissioned and used for
a series of full-dress RI-beam experiments. Overview and status of the ZeroDegree
spectrometer will be reported.

[1] Y. Yano: Nucl. Instr. and Meth. **B 261** (2007) 1009.

[2] T. Kubo: Nucl. Instr. and Meth. **B 204** (2003) 97 and T. Ohnishi et al.: J.
Phys. Soc. Japan, **77** (2008) 083201.

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