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Gamma-ray spectroscopy experiments at RIKEN

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In the Radioactive Isotope Beam Factory (RIBF) stable primary beams of energies up to 345 MeV/nucleon are used to produce radioactive isotope beams via in-flight separation with the BigRIPS fragment separator.

For gamma-ray spectroscopy experiments these radioactive beams are either incident on a secondary target for in-beam experiments or stopped to measure isomeric or beta-delayed gamma-emission.

In my presentation I will report on the results obtained from the first gamma-ray spectroscopy experiments performed at the RIBF. For stopped-beam experiments neutron-rich nuclei in the mass region $A=110$ were investigated after fission of a ^{238}U primary beam. In this mass region, shape transitions around the Zr isotopes were studied. The first in-beam gamma-ray experiments targeted the "Island of Inversion", a region in which the standard ordering of shells is disturbed by neutron intruder configuration across the $N=20$ shell gap.

Besides showing the results from these first experiments an outlook on future gamma-ray spectroscopy campaigns at the RIBF will be given.

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