

Design of Double Storage Rings at MUSES,
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Tokyo - The Double Storage Rings (DSR) is an
experimental colliding rings planned in Radio Isotope Beam
Factory at RIKEN. In the DSR unique experiments are
envisaged through collision or merging of RI beams with
electron beams, ion beams and X-rays produced from an
undulator. The DSR is composed of two rings called
electron ring and ion ring. The electron ring stores not only
electron beam but also ion beam for merging experiment. In
this ring electron beam is injected by multi-turn and stored
by two operation modes which has emittance of
1 micro m*rad for collision with RI beam and
10 nano m*rad for production of high brilliant X-ray.
Control of emittance is performed by lattice parameter of an
arc. Ion beam is injected by one-turn and stored by another
mode from electron beam. The ion ring stored only ion
beam. This ring has two injections. Ion beam is injected
and stored with the same way as the electron ring. The
circumference of each ring is 269.568 m. The experiments
are performed at two crossing points. One is for collision
of RI beam with electron with crossing angle of 20 mrad.
Another is for the merging for ion beams with angle of
170 mrad. Study of dynamic apperture with chromaticity
correction will be presented.