

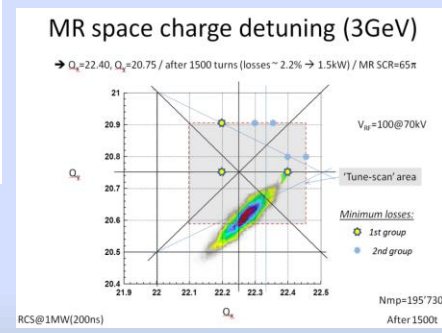
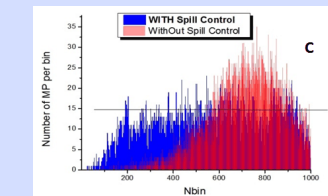
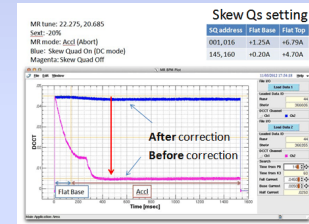
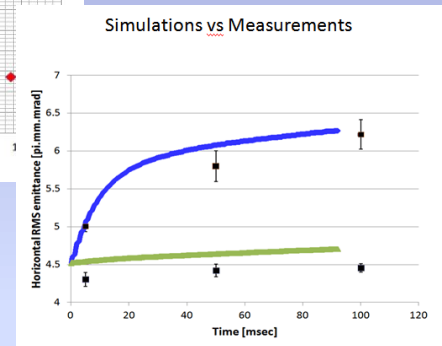
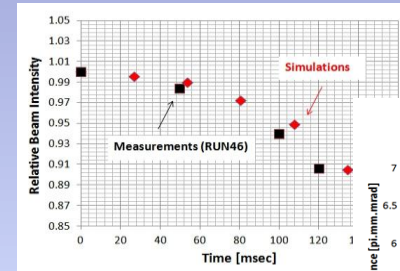
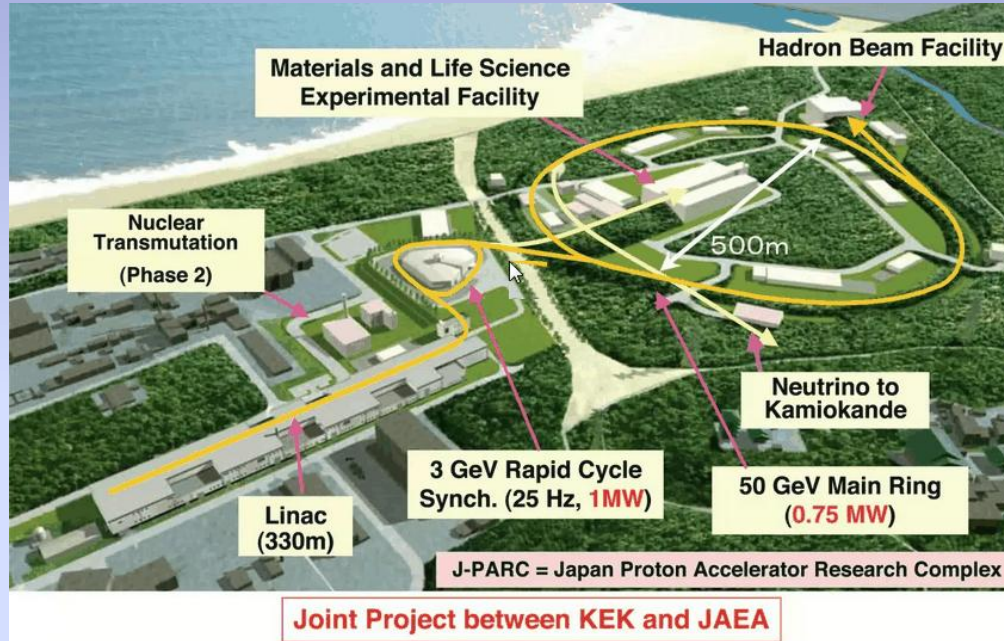
# Beam dynamics study for JPARC synchrotrons: study effects of the space charge and nonlinear fields

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'Low-loss' J-PARC Main Ring operation



The goals of this study:

- (1) study the emittance growth mechanism at the injection energy for the J-PARC Main Ring to guarantee minimum particle losses around the machine;
- (2) optimization the machine performance for different scenario of the machine operation to provide 'safe' machine operation;
- (3) better understanding the spill control for the case of the slow resonant extraction of the accelerated beam.

Benchmark of the simulations and performed measurements is required to demonstrate reliability of the simulation results for different cases.