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**Emittance study of an 28GHz ECR ion source for the RISP superconducting
linac**

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A 28GHz ECR(Electron Cyclotron Resonance) ion source is under development as one of injectors for the RISP(Rare Isotope Science Project) superconducting linac. The KOBRA3D-INP code was adopted to simulate the beam extraction from the ECR ion source. The code can calculate the particle trajectories under the three dimensional complex magnetic field structures which are made by superconducting magnets, four solenoids and a saddle-type sextupole. The beam transport after the ECR ion source is calculated by using the TRACK code to track multiple-charge-state heavy-ion beams. In this study, the beam emittance is simulated to understand the effect of a plasma potential, a charge-to-mass ratio, a charge state distribution and a spatial distribution. The details of numerical and experimental results will be described.

Desired presentation

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Desired category

Electron Cyclotron Resonance Ion Sources