

Study on Superconducting Quarter Wave Resonator for CW Intense Ion Linac,
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CO. - Superconducting coaxial quarter wave resonator is used for low beta ion linacs. But it should be carefully used for cw intense machine for a following reason. Because of asymmetrical structure of the resonator, the accelerating electric field on beam axis has weak dipole-like component, vertical to beam axis. Therefore, there is a possibility of emittance growth causing beam spill, which is severely restricted for the intense SC machine in order to avoid radio-activation. We will report the results of beam simulation with simple impulse approximation, taking into account distorted electromagnetic field calculated by three dimensional electromagnetic analysis code MAFIA.