

Beam dynamics design of the superconducting section of a 100 mA superconducting linac

Tuesday 27 August 2024 16:00 (2 hours)

A high-power superconducting linac with an energy of 30 MeV and a beam current of 100 mA has been proposed and designed. The primary challenge lies in beam loss control and a robust lattice structure to ensure stable operation. This paper discusses the physics design study, design principles, and simulation results considering machine errors. Extensive multiparticle simulations (a cumulative statistic of 1×10^5 macroparticles) demonstrated that this linac operating at 100 mA could maintain beam losses lower than 1 W/m in error scenarios.

Footnotes

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