

THE CW CORNELL ERL INJECTOR CRYOMODULE

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Abstract

The Cornell ERL Prototype injector RF system will accelerate bunches of a 100 mA beam to an energy of several MeV, while preserving the ultra-low emittance of the beam. The injector linac will be based on superconducting RF technology with five 2-cell RF cavities operated in CW mode. Beside the five RF cavities, the injector cryomodule houses six broadband RF ring-absorbers located at 80 K for HOM damping, ten input couplers, LHe vessels with cavity frequency tuner, a cavity support structure and the cryogenic piping. The axial symmetry of the HOM absorbers, together with a twin-coupler design, avoids transverse on-axis fields, which would cause emittance growth. The design of the cryomodule is nearly finished, and prototyping of subcomponents has started. We expect first beam through the injector RF system late 2008. In this paper we give an update on the ERL injector cryomodule work.

NO SUBMISSION RECIEVED