

DESIGN AND ANALYSIS OF 45 MV/m SUPERCONDUCTING STRUCTURES

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Abstract

We have been developing high gradient superconducting structures to be operated at 45 MV/m. We chose a cavity shape with a minimum available ratio of surface magnetic field to accelerating gradient and designed 9-cell structures aiming at a maximum gradient toward 50 MV/m, a theoretical limit set by the critical surface magnetic field around 1800 Oe. We simulated the structures electromagnetically and mechanically to obtain detailed analysis data for fabrication and tuning. The first four 9-cell Nb structures will soon be completed and tested.

NO SUBMISSION RECIEVED