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Structural design and preliminary testing study of a low β S-band high-gradient cryogenic copper cavity for hadron therapy

Tuesday 3 June 2025 16:00 (2 hours)

A compact, low cost and beam parameters flexible hadron accelerator is pursued for the effective hadron radiotherapy all the time. The high gradient technology is promising to realize an ideal linac for radiotherapy. The cryogenic copper cavity was proposed and demonstrated for even higher gradient and lower power consumption with electron linac. In this paper, we proposed to use low beta S-band high-gradient cryogenic copper cavity for hadron therapy linac. A S-band cryogenic β=0.3 15-cell negative harmonic structure (NHS) was studied. The design and preliminary tested results of the structures are presented here.

Footnotes

Paper preparation format

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Region represented

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