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RF design of the positron traveling-wave structure

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The Super Tau-Charm Facility (STCF) is a new generation of electron-positron colliders being planned with a design center of mass energy of 2-7 GeV. In the concept design, the positrons produced by electron targeting are accelerated to an energy of 200MeV by three large-aperture accelerating structures, and then to 3.5GeV by several conventional accelerating structures. The aperture of large-aperture accelerating structures is maintained constant, and the group speed is controlled solely by adjusting the length of the nose cone for easier production. Pulse compressors are taken into account to increase the accelerating structures power. In this paper, the designs of 2m and 3m large-aperture accelerators are presented, both achieving gradients higher than 15 MV/m.

Footnotes

Paper preparation format

LaTeX

Region represented

Asia

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