

The 2023 International Workshop on the High Energy Circular Electron Positron Collider

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CEPC Linac injector R&D status

The CEPC Linac provides 30 GeV electrons and positrons at the exit, with a 1.1 GeV positron damping ring. The RF pulse repetition frequency is 100 Hz. For Higgs $t\bar{t}$ mode, per pulse one bunch is enough. For Z mode, double bunches per pulse is needed.

The RF system includes a bunching system and main accelerating structures. The bunching system comprises of two sub-harmonic cavities with frequencies of 158.89 MHz and 476.67 MHz, and one 2860 MHz S-band accelerating structure. For the total 30 GeV linac, there are 5.1 GeV S-band and 28.9 GeV C-band accelerating structures, with frequency of 5720 MHz. The R&D status of CEPC linac injector including the DR 5 cell normal conducting cavity design will be introduced.

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