Contribution ID: **126** Contribution code: **TUP126-WEB** Type: **Poster Presentation**

A high-energy XFEL scheme based on the CEPC linear accelerator

Tuesday 20 August 2024 20:40 (20 minutes)

The Circular Electron Positron Collider (CEPC) is a large-scale scientific project consisting of three accelerators: a 30 GeV Linac, a full-energy booster, and a collider operating at four different energy modes. The CEPC Linac is a normal-conducting linear accelerator with an energy of 30 GeV and repetition frequency of 100 Hz. To fully utilize the potential of the Linac, during the injection interval, it can be function as a high-energy XFEL that produces photon energies greater than 50 keV. To achieve this, a new injector system based on a C-band RF electron gun is added to the linear accelerator, along with two bunch compression sections and beamlines. This paper proposed the high-energy XFEL scheme and detailed design.

Footnotes

Funding Agency

Primary author: Dr MENG, Cai (Chinese Academy of Sciences)

Co-authors: ZHANG, Jingru (Chinese Academy of Sciences); LI, Jingyi (Chinese Academy of Sciences); DU, Lei (Institute of High Energy Physics); XIAO, Ouzheng (Institute of High Energy Physics); LI, Wei (Institute of High Energy Physics); ZHANG, Xiang (Chinese Academy of Sciences); LI, Yuhui (Chinese Academy of Sciences); LIU, Zhongtian (Institute of High Energy Physics)

Presenter: Dr MENG, Cai (Chinese Academy of Sciences)

Session Classification: Poster session

Track Classification: Electron beam dynamics