

eeFACT 2025 - 70th ICFA Advanced Beam Dynamics Workshop on High Luminosity Circular e+e-Colliders



Contribution ID: 8

Type: **Invited Oral Presentation**

The status of the Future Circular electron-positron Collider

In 2020 the European Strategy for Particle Physics Update (ESPPU) recommended an Electroweak- and Higgs-factory as the highest priority next collider after completion of the High-Luminosity Large Hadron Collider (HL-LHC), to be followed by a hadron collider with a center-of-mass energy of about 100 TeV. The so-called integrated Future Circular Collider (FCC) program would fulfill this recommendation and foresees first, an electron-positron machine, the FCC-ee, followed by a hadron one, the FCC-hh. Both are storage ring colliders, designed to be installed in the same tunnel infrastructure with approximately 91 km circumference and integrated in the existing CERN infrastructure. Tremendous effort has been put into optimizing the FCC-ee baseline lattice, including novel arc and interaction region optics designs, an improved injection scheme, and a dedicated collimation optics. A first commissioning strategy with dedicated optics has been defined, including beam-based alignment strategies and advanced tuning techniques to achieve its ambitious design parameters. The latest status of the FCC-ee is presented here, highlighting accelerator challenges and studies to assess and overcome them.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

Primary author: KEINTZEL, Jacqueline (European Organization for Nuclear Research)

Co-authors: CARLI, Christian (European Organization for Nuclear Research); ZIMMERMANN, Frank (European Organization for Nuclear Research); ROY, Ghislain (European Organization for Nuclear Research); OIDE, Katsunobu (European Organization for Nuclear Research); BENEDIKT, Michael (European Organization for Nuclear Research); TOMAS, Rogelio (European Organization for Nuclear Research)

Presenter: KEINTZEL, Jacqueline (European Organization for Nuclear Research)

Session Classification: Present and future colliders

Track Classification: WG1 : Present and future colliders