



Contribution ID: 1053 Contribution code: WEPR02

Type: **Poster Presentation**

## The status of the FCC-ee optics tuning

*Wednesday, 22 May 2024 16:00 (2 hours)*

With a circumference of approximately 91 km, the electron-positron Future Circular Collider, FCC-ee, aims to achieving unprecedented luminosities at beam energies from 45.6 to 182.5 GeV. One of the most profound challenges is to reach its design performance in the presence of various alignment and field errors. The FCC-ee optics tuning working group studies all aspects of this wide topic, applying state-of-the art techniques for beam-based alignment, commissioning simulations, beam threading and optics measurements and corrections, probed at numerous world-leading accelerator physics facilities. Recently, long-range misalignments models have been developed to probe tuning simulations, including IP tuning, progress has been made with magnetic tolerances and a new optics is being thoroughly studied. The current status of tuning simulations for different FCC-ee lattices is presented here.

### Footnotes

### Funding Agency

### Paper preparation format

### Region represented

Europe

**Primary author:** VAN RIESEN-HAUPT, Léon (Ecole Polytechnique Fédérale de Lausanne)

**Co-authors:** FRANCHI, Andrea (European Synchrotron Radiation Facility); FAUS-GOLFE, Angeles (Université Paris-Saclay, CNRS/IN2P3, IJCLab); CHANCE, Antoine (Commissariat à l'Énergie Atomique et aux Énergies Alternatives); DALENA, Barbara (Commissariat à l'Énergie Atomique et aux Énergies Alternatives); GARCIA JAIMES, Cristobal Miguel (European Organization for Nuclear Research); SHATILOV, Dmitry (Russian Academy of Sciences); MUSA, Elaf (Deutsches Elektronen-Synchrotron); AHMADI, Esmaeil (Iranian Light Source Facility); VALCHKOVA-GEORGIEVA, Fani (CEGEC SA (Actemium Geneve)); Dr CARLIER, Felix (Ecole Polytechnique Fédérale de Lausanne); ZIMMERMANN, Frank (European Organization for Nuclear Research); SIMON, Guillaume (European Organization for Nuclear Research); DURAND, Helene Mainaud (European Organization for Nuclear Research); AGAPOV, Ilya (Deutsches Elektronen-Synchrotron); KEINTZEL, Jacqueline (European Organization for Nuclear Research); BAUCHE, Jeremie (European Organization for Nuclear Research); OIDE, Katsunobu

(European Organization for Nuclear Research); MALINA, Lukas (Deutsches Elektronen-Synchrotron); HOFER, Michael (European Organization for Nuclear Research); KORATZINOS, Michael (European Organization for Nuclear Research); RAIMONDI, Pantaleo (European Synchrotron Radiation Facility); DE MARIA, Riccardo (European Organization for Nuclear Research); TOMAS, Rogelio (European Organization for Nuclear Research); WHITE, Simon (European Synchrotron Radiation Facility); LIUZZO, Simone (European Synchrotron Radiation Facility); DA SILVA, Tatiana (Commissariat à l'Énergie Atomique); PIELONI, Tatiana (Ecole Polytechnique Fédérale de Lausanne); CHARLES, Tessa (Australian Synchrotron - ANSTO); LEFEVRE, Thibaut (European Organization for Nuclear Research); PERSSON, Tobias (European Organization for Nuclear Research); RAUBENHEIMER, Tor (SLAC National Accelerator Laboratory); HUANG, Xiaobiao (SLAC National Accelerator Laboratory); PAPA-PHILIPPOU, Yannis (European Organization for Nuclear Research); WU, Yi (Ecole Polytechnique Fédérale de Lausanne); OHNISHI, Yuki Yoshi (High Energy Accelerator Research Organization)

**Presenter:** VAN RIESEN-HAUPT, Léon (Ecole Polytechnique Fédérale de Lausanne)

**Session Classification:** Wednesday Poster Session

**Track Classification:** MC1: Colliders and other Particle and Nuclear and Physics Accelerators: MC1.A02 Lepton Circular Colliders