Contribution ID: **154** Type: **Talk**

【285】Lattice correction and polarization estimation for the Future Circular Collider e+e-

Friday 13 September 2024 14:30 (15 minutes)

Precise determination of the center-of-mass energy in the Future Circular Collider e+e- (FCC-ee) at Z and W energies can be achieved by employing resonant spin depolarization techniques, for which a sufficient level of transverse beam polarization is demanded under the presence of machine imperfections. In this study, the FCC-ee lattice has been modeled and simulated with a variety of realistic lattice imperfections, including misalignments, angular deviations, BPM errors, long-range errors, etc., along with refined orbit correction and tune matching procedures. The equilibrium polarization is calculated within the context of realistic machine models, aiming to understand the underlying reason for polarization loss and potentially improve polarization by lattice manipulation.

Author: WU, Yi (EPFL - Ecole Polytechnique Federale Lausanne (CH))

Co-authors: CARLIER, Felix Simon (CERN); VAN RIESEN-HAUPT, Leon (EPFL - Ecole Polytechnique Federale Lausanne (CH)); SEIDEL, Mike; Dr PIELONI, Tatiana (EPFL); HERR, Werner (EPFL - Ecole Polytechnique Federale Lausanne (CH))

Presenter: WU, Yi (EPFL - Ecole Polytechnique Federale Lausanne (CH))

Session Classification: Accelerator Science and Technology

Track Classification: Accelerator Science and Technology