Contribution ID: **84** Type: **not specified**

FCC-ee positron source

Wednesday 30 June 2021 16:36 (18 minutes)

In the framework of the design and realization of a lepton collider, positron sources are essential due to the challenging critical requirements of high-beam intensity and low emittance necessary to achieve high luminosity. In the case of positron beams to be injected into circular colliders, the main concern is an optimized 6D emittance, whereas very high intensities are required for linear colliders. These constraints about intensity and emittance have strong consequences on the heat load and reliability of the targets. The high-luminosity circular collider FCC-ee will need a low-emittance positron beam with high enough intensity to shorten the injection time. A positron bunch intensity of about 2.1e10 particles is required at the injection into a pre-booster ring. Due to the large 6D production emittance and important thermal load in the production target, the positron injector, in particular the positron source, is one of the key elements of the FCC-ee, requiring special attention. In this framework, we present the preliminary studies of the FCC-ee positron source highlighting the main requirements and constraints.

Author: Dr CHAIKOVSKA, Iryna (CNRS/IJCLab)

Co-author: WP3 TEAM (FCC-EE INJECTOR UPDATE STUDIES)

Presenter: Dr CHAIKOVSKA, Iryna (CNRS/IJCLab)

Session Classification: FCC-ee accelerators

Track Classification: FCCIS EU H2020 project: FCCIS WP2 (FCC-ee design)