



Contribution ID: 60

Type: **not specified**

Impedance model and single-beam collective effects

Wednesday, 11 April 2018 13:30 (20 minutes)

FCC-ee is a high luminosity lepton collider designed to cover the beam energy range from the Z pole (45.6 GeV) to the top pair threshold (175 GeV). One of the major issues for this machine is represented by collective effects due to electromagnetic fields generated by the interaction of the beam with the vacuum chamber, which could produce instabilities and limit the machine performance. This contribution focuses on the impedance model and collective effects at Z running: we present the contributions to the total impedance budget of some important vacuum chamber components and their effects on the beam dynamics. A particular attention is given to the resistive wall impedance representing the main source of wakefield in the machine: the presence of a NEG coating needed for pumping and electron cloud mitigation makes this impedance responsible of quite low intensity thresholds in both longitudinal and transverse planes. In this context, thin NEG film coatings have been investigated to find the minimum effective thickness ensuring a good activation performance and a low SEY for electron cloud suppression.

Primary author: BELLI, Eleonora (Sapienza Universita e INFN, Roma I (IT))

Co-authors: MIGLIORATI, Mauro (Sapienza Universita e INFN, Roma I (IT)); RUMOLO, Giovanni (CERN); CAS-TORINA, Giovanni (Sapienza Universita e INFN, Roma I (IT)); ZOBOV, Mikhail (INFN LNF, Frascati (IT))

Presenter: BELLI, Eleonora (Sapienza Universita e INFN, Roma I (IT))

Session Classification: FCC-ee accelerator

Track Classification: FCC-ee ACC