



Contribution ID: 159

Type: **not specified**

Impedance of cold beamscreen

Thursday 12 April 2018 14:10 (15 minutes)

In comparison to the LHC beamscreen, the FCC beamscreen is more compact, has much larger pumping holes for achieving high vacuum, and incorporates a surface treatment for electron cloud mitigation. All of these factors can dramatically increase coupling impedance of the beamscreen. The impact on the coupled bunch and the single bunch instabilities is analysed. The necessary pumping hole shielding is estimated. Suggestions are made on minimizing the impedance due to the surface treatment. Impedance of interconnects between the dipole magnets is assessed.

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Session Classification: FCC-hh accelerator

Track Classification: EuroCirCol