Contribution ID: **678** Type: **Presentation**

Measurement of the beam-beam effects on the crossing angle and CM energy at IP

Tuesday 25 June 2019 09:10 (20 minutes)

The beam-beam "pinch" effect at the interaction point causes the FCC-ee beam energies to increase by a small amount (60 keV at the Z pole) at the interaction point with respect to the values measured by resonant depolarization. This increase is accompanied by an increase of the crossing angle at the IP by 0.177 mrad. The centre-of-mass energy calculated with the beam energies measured by resonant depolarization and by the crossing angle measured at the IP would be biassed by -120 keV with respect to the actual centre-of-mass energy. This bias is of the same order as the precision of the beam energy measurement. A method to measure the crossing angle increase in situ, and therefore to correct for this bias, is presented.

Author: JANOT, Patrick (CERN)

Presenter: JANOT, Patrick (CERN)

Session Classification: FCC physics, experiments & detectors

Track Classification: FCC-ee detector & experiment