



Contribution ID: 2061 Contribution code: MOPL001

Type: **Poster Presentation**

Status of the beam-based measurement of the skew-sextupolar component of the radio frequency field of a HL-LHC-type crab-cavity

Monday 8 May 2023 16:30 (2 hours)

Two High Luminosity Large Hadron Collider (LHC) type crab-cavities have been installed in the CERN SPS for testing purposes. A first partially successful attempt to characterize the skew-sextupolar component of the radio frequency field of the crab-cavity by means of beam-based techniques has been carried out in 2018. The large orbit distortion produced by the crab cavity dipolar field combined with the multipolar errors in the SPS optics resulted in some systematic errors that cannot be easily accounted for. After a major overhaul of the SPS turn-by-turn BPM system a second attempt was carried out in 2022. In the attempt to keep under control systematic errors, orbit correctors have been used to compensate the large orbit excursion produced otherwise by the crab cavity. The results of the new measurement are here discussed.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: CARLÀ, Michele (ALBA-CELLS Synchrotron)

Co-authors: CARLIER, Felix (Ecole Polytechnique Fédérale de Lausanne); BARTOSIK, Hannes (European Organization for Nuclear Research); CALAGA, Rama (European Organization for Nuclear Research); TOMAS, Rogelio (European Organization for Nuclear Research); KOSTOGLOU, Sofia (European Organization for Nuclear Research)

Presenter: CARLÀ, Michele (ALBA-CELLS Synchrotron)

Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle Physics Accelerators: MC1.A01: Hadron Colliders