IPAC'23 - 14th International Particle Accelerator Conference



Contribution ID: 1037 Contribution code: MOPL024

Type: Poster Presentation

Measurement and modelling of decapole errors in the LHC from beam-based studies

Monday, 8 May 2023 16:30 (2 hours)

Studies of third-order chromaticity in the LHC during its initial two runs have consistently demonstrated a substantial discrepancy between the expected Q at injection and that observed in beam-based measurements. In 2022 during Run 3, for the first time, studies of Q have been complemented by measurements of chromatic detuning, being the momentum-dependence of amplitude detuning, and the decapole resonance driving term \square 1004. In this paper, these beam-based measurements are presented and compared to the magnetic model. Potential sources of the previously identified Q discrepancy are discussed.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: LE GARREC, Mael (European Organization for Nuclear Research)

Co-authors: CARLIER, Felix (Ecole Polytechnique Fédérale de Lausanne); DILLY, Joschua (European Organization for Nuclear Research); FERRENTINO, Vittorio (European Organization for Nuclear Research); MACLEAN, Ewen (European Organization for Nuclear Research); TOMAS, Rogelio (European Organization for Nuclear Research); PARASCHOU, Konstantinos (European Organization for Nuclear Research)

Presenter: LE GARREC, Mael (European Organization for Nuclear Research)

Session Classification: Monday Poster Session

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