



Contribution ID: 1189 Contribution code: THPC14

Type: **Poster Presentation**

Performance improvement studies of the fixed target beams along the CERN injector chain

Thursday, 23 May 2024 16:00 (2 hours)

Within the LHC Injectors Upgrade (LIU) project, the LHC injectors received major upgrades that resulted in an unprecedented brightness performance. In the framework of the Physics Beyond Colliders (PBC) study, the full potential of the upgraded injectors is being explored for the improvement of the Fixed Target (FT) beams as well. This contribution details the recent studies on the beam transmission and beam quality along the injectors of the SPS Fixed Target PROton (SFTPRO) beams that reach the North Area (NA) experiments. In particular, the possibilities for tailoring the transverse emittances out of the PSB and the impact on the beam transmission in the SPS are shown. Furthermore, the impact of the transverse damper excitation on the efficiency of the Multi-Turn-Extraction in the PS are discussed. Finally, the main factors that limit the intensity reach of the injectors are also discussed.

Footnotes

Funding Agency

Paper preparation format

LaTeX

Region represented

Europe

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Session Classification: Thursday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D07 High Intensity Circular Machines Space Charge, Halos