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LHC optics commissioning in 2023 and 2024

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The LHC machine configuration was changed in 2023 compared to previous years, requiring a new set of optics configurations to be measured and corrected. A telescopic optics was deployed in energy the ramp for the first time, which gave rise to a beta-beating of up to 25%. This was corrected using a global correction approach which reduced the beta-beat down to 10%. A change in the phase advance at injection was also applied to mitigate the negative effect of the main octupoles used to stabilize the beam. These measurements and corrections, coupled with the results from the 2024 commissioning, will be presented in this paper

Footnotes

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