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Parameter and luminosity scenarios for FCC-hh

Monday 2 June 2025 16:00 (2 hours)

In preparation for the 2026 Update of the European Strategy for Particle Physics, various options for a future circular hadron collider, FCC-hh, are being proposed. Here, we discuss a few operational scenarios spanning c.m. energies from about 70 to 120 TeV, which correspond to arc dipole field strengths ranging from 12 to 20 T. We present the respective integrated luminosity forecasts, considering a proton beam current similar to the one of the existing LHC or the upcoming HL-LHC, and limiting the total synchrotron radiation power to at most 5 MW. Additional constraints are imposed on the beam-beam tune shift and on the maximum event pile up.

Footnotes

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