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First design of a 10 TeV centre of mass energy muon collider

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The design of a muon collider complex requires to overcome challenges associated with muons short lifetime. To reach the expected luminosity for a multi TeV muon collider ring an interaction region with beta values of the order of a few millimetres is required. Resulting challenges are the development of a chromatic compensation section that is not degrading the physical and dynamical aperture, while allowing the control of the momentum compaction factor, as well as the control of the radiation due to muons reaching the earth surface. A preliminary version of a 10 TeV centre-of-mass energy muon collider ring fulfilling these requirements and taking limitations from the detector and magnet design into account is presented.

Funding Agency

Footnotes

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Yes

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