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Optics design status for the muon collider rapid cycling synchrotrons

Monday 2 June 2025 16:00 (2 hours)

The baseline design for the high-energy complex of a muon collider consists of a chain of pulsed synchrotrons spanning an energy range from 63 GeV to the target collision energy of 5 TeV. This chain incorporates both normal and hybrid synchrotrons, featuring a combination of fixed-field superconducting magnets and pulsed normal-conducting magnets. Initial optics designs for the chain of synchrotrons have been completed, with optimization efforts focused on minimizing the aperture dimensions required for dipoles and quadrupoles. Preliminary tracking studies have also been performed to evaluate emittance preservation throughout the acceleration process.

Footnotes

Paper preparation format

LaTeX

Region represented

Europe

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