Contribution ID: **315** Contribution code: **TUP082** Type: **Poster Presentation**

Rapidly pulsed synchrotron acceleration chain for a Fermilab sited muon collider

Tuesday 12 August 2025 16:00 (2 hours)

We present a preliminary lattice based on a bottom up design for a rapidly cycling synchrotron (RCS) accelerator chain for a multi-TeV muon collider based at Fermilab. The RCS rings range in circumference from 6.28 km (that of the Tevatron) to 15.5 km (the current estimate for the maximum that can be accommodated at the Fermilab site). Each ring is either a conventional RCS (consisting of iron dominated, ramped field magnets) or a hybrid RCS (consisting of interleaved ramped field and superconducting, coil dominated, fixed field magnets, which enable such rings to achieve higher average fields while retaining rapid ramping capabilities over their energy range). An injection energy of 63 GeV is used for the first ring (RCS 1). The tradeoff between the ultimate energy and the survival rate of the muons for different variants of the synchrotron chain is examined.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

Yes

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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