



Contribution ID: 525 Contribution code: WEPR35

Type: **Poster Presentation**

A High-Energy Muon Collider at Fermilab

Wednesday, 22 May 2024 16:00 (2 hours)

The High-Energy Physics community has established that a multi-TeV Muon Collider should be included in plans for future high energy facilities. We consider the possibility of siting the future high energy muon collider at Fermilab. Using magnet and RF system capabilities that are expected to be readily available in the near future a complete muon collider facility with up to ~ 10 TeV center of mass energy could fit on the Fermilab site. This facility would include a proton source based on PIP-II, muon production and cooling systems, and accelerators reaching up to ~ 5 TeV/beam, and a fixed-field collider ring. The largest accelerator would be a two-stage hybrid rapid cycling synchrotron with ~ 16.5 km circumference. The facility will reuse Fermilab infrastructure whenever possible. Parameters and layouts of possible colliders will be presented as well as a discussion of required R&D.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

North America

Primary author: STRATAKIS, Diktys (Fermi National Accelerator Laboratory)

Co-authors: BERG, J. (Brookhaven National Laboratory); JINDARIANI, Sergio (Fermi National Accelerator Laboratory); NEUFFER, David (Fermi National Accelerator Laboratory)

Presenter: STRATAKIS, Diktys (Fermi National Accelerator Laboratory)

Session Classification: Wednesday Poster Session

Track Classification: MC1: Colliders and other Particle and Nuclear and Physics Accelerators: MC1.A09 Muon Accelerators, Neutrino Factories, Muon Colliders