

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Muon Cooling Channel Design Status DIKTYS STRATAKIS, Fermilab, MUON ACCELERATOR PROGRAM COLLABORATION — A Muon Collider requires a reduction of the six-dimensional emittance of the captured muon beam by several orders of magnitude. We present a complete cooling scheme that should meet this requirement. The scheme starts with the front end of a proposed Neutrino Factory that yields bunch trains of both muon signs. Subsequently, a 6-dimensional ionization cooling lattice reduces the longitudinal emittance until it becomes possible to merge the trains into single bunches, one of each sign. Further 6-dimensional ionization cooling is applied to the single bunches followed by final linear transverse cooling within multi-Tesla solenoids. We review the main accelerator components involved in the above scheme as well detail the required beam and lattice parameters for successful cooling.

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Date submitted: 11 Jan 2021

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