

A path towards at 10 TeV Muon Collider

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Muons are elementary particles and all their energy is available in a collision, with far cleaner events relative to those produced by the smash of a composite particle like the proton. Muons are also heavy, meaning that they are less prone to synchrotron radiation that effectively limits the energies of circular electron-positron colliders. This raises the prospect that a Muon Collider could exceed the direct energy reach of the Large Hadron Collider, while achieving unprecedented precision measurements of Standard Model processes. In this article we summarize the work and progress achieved so far towards such a machine. We also identify a set of further studies needed and describe a plan to bring these ideas to maturity so that to make a Muon Collider a reality on the timescale of approximately two decades.

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