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Muon Collider: prospects, challenges and the latest progress

A **Multi-TeV Muon Collider** provides a unique opportunity for high-precision physics at the energy frontier thanks to the clean lepton collisions delivered at energies unreachable to electron-positron colliders. In particular, at the centre-of-mass energies above 2 TeV it is the most-energy-efficient discovery machine, and at $\sqrt{s}=14$ TeV it has the physics reach comparable to that of the $\sqrt{s}=100$ TeV FCC-hh. Finally, Muon Collider is the only machine capable of producing enough double and triple Higgs-boson events for measuring the trilinear and quadrilinear self-couplings and **determining the shape of the Higgs potential**. The international collaboration is currently being formed, while the accelerator and detector design studies have been ongoing for several years now.

This contribution will give an overview of the physics potential of a Muon Collider and the major technological challenges that are currently being addressed by the ongoing R&D efforts. The present status of the project and the latest results of the detector-performance simulation studies at the $\sqrt{s}=1.5$ will be also presented.

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