Contribution ID: **28**   Type: **not specified**

H → μμ at a 3-TeV muon collider

Monday, 18 July 2022 20:40 (20 minutes)

Among the projects currently under study for the next generation of particle accelerators, the muon collider represents a unique machine, which has the capability to provide leptonic collisions at energies of several TeV. The multi-TeV energy regime is as yet unexplored and holds a huge physical potential that will enable a novel research programme ranging from high precision measurements of known standard model processes to high-sensitivity searches for phenomena beyond the standard model. A multi-TeV muon collider will produce huge samples of Higgs bosons that will allow a determination of the Higgs boson properties with unprecedented precision, like its couplings to fermions and bosons and its trilinear and quartic self-couplings.

This contribution will present a study, based on a detailed detector simulation and a full-fledged muon reconstruction, of the muon collider prospects for the H → μμ production, one of the rarest Higgs boson processes that represents a gateway to the determination of the Higgs boson coupling to the second generation leptons.

In-person or Virtual?

In-person

Primary author: MONTELLA, Alessandro

Co-authors: CASARSA, Massimo (INFN Trieste);   CANDELISE, Vieri (University of Trieste and INFN Trieste)

Presenter: MONTELLA, Alessandro

Session Classification: Poster Session