

# Higgs self-coupling possibilities at multi-TeV muon collider

*Wednesday 6 November 2024 14:30 (20 minutes)*

The determination of the double and triple Higgs production cross sections will allow probing the triple and quartic self-couplings of the Higgs boson, providing an opportunity to directly explore the nature of the scalar potential. The multi-TeV muon collider offers a unique opportunity to measure these couplings, thanks to the high production cross sections of multi-Higgs processes and the low physics background environment. This contribution will present the results obtained from detailed detector simulations, including both physics and machine-induced backgrounds, on double Higgs cross-section measurements and Higgs self-coupling extraction, and will discuss the prospects for triple Higgs studies.

## Primary track

Higgs physics at future colliders

## Is the speaker a PhD student or post-doc?

No

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**Session Classification:** Common session: HH & future colliders 1 - sal IV

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