

# Top-Quark Pair Production in 1 Higgs-Singlet Model

*Monday 14 July 2025 17:10 (20 minutes)*

1 Higgs-Singlet Model (1HSM) is a minimal extension of the Standard Model with two physical scalar bosons. Top quark pair production in 1HSM is associated with large interference effects between loop-induced Higgs-mediated amplitudes and the QCD continuum background. I will talk about the research work on top quark pair production in 1HSM at NLO accuracy by Banfi et al. (arXiv: 2309.16759), and outline the main results. I will talk about the computation of the cross section of the top-quark pair production in the Higgs Effective Field Theory framework to make phenomenological predictions at the LHC.

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**Session Classification:** Student Talks