

Towards HH at NNLO QCD: the n_h^2 contribution

Tuesday, November 5, 2024 2:30 PM (20 minutes)

The virtual corrections for $gg \rightarrow HH$ at NLO QCD have been efficiently approximated using a Taylor expansion in the limit of a forward kinematics. The same method has been recently applied to the calculation of a subset of the NNLO corrections, which are desirable given the significant impact, at NLO, of the uncertainty due to the choice of the top mass renormalization scheme. In this talk, I will report on the progress in the calculation of another contribution at NNLO, given by diagrams in which the two Higgs bosons couple to different top quark loops. For this contribution a naive Taylor expansion cannot be used, and I will instead discuss an approach based on asymptotic expansions in different kinematic limits.

Primary track

Precision Higgs measurements and calculations

Is the speaker a PhD student or post-doc?

Yes - My participation will be fully supported by my research group

Primary author: VITTI, Marco (Karlsruhe Institute of Technology - TTP and IAP)

Presenter: VITTI, Marco (Karlsruhe Institute of Technology - TTP and IAP)

Session Classification: Higgs boson pairs and Higgs potential 1 - sal IX

Track Classification: Higgs boson pairs and Higgs potential (including electroweak phase transitions and connections to cosmology)