

Short CV

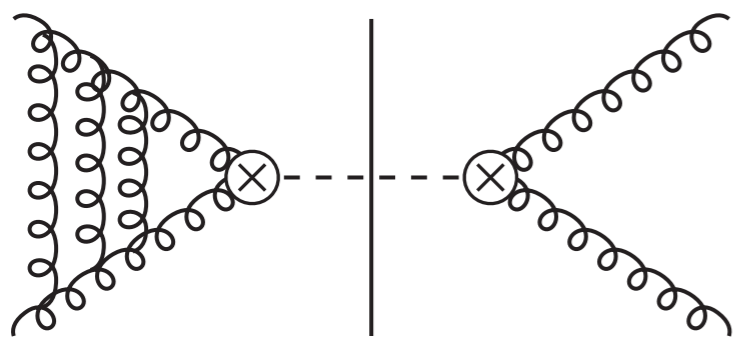
- Name: Claude Duhr
- 2009: PhD from the Université catholique de Louvain.
- 2009 - 2011: Postdoc at the IPPP Durham.
- 2011 - 2013: Postdoc at the ETH Zurich.
- 2012 - 2014: Lecturer at the IPPP Durham.
- From October 2014: Chercheur Qualifié du FNRS at the Université catholique de Louvain.
- December 2014 - 2019: CERN TH Division.

My research activities

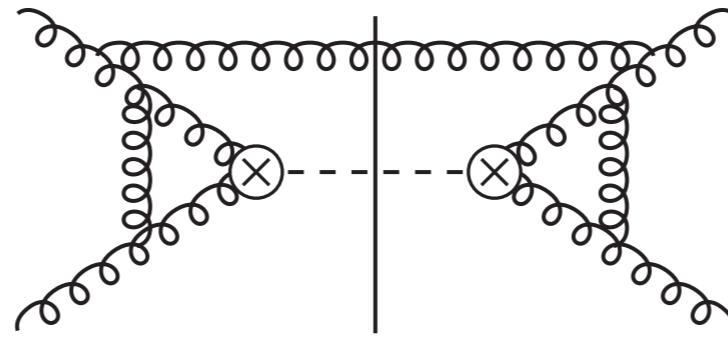
- Mathematical properties of multi-loop integrals.
- Multi-loop computations in N=4 Super Yang-Mills.
- Multi-loop computations in QCD.
- Inclusive gluon-fusion cross section at N³LO.
- FeynRules (automatic generation of Feynman rules in Mathematica).

Higgs @ N3LO

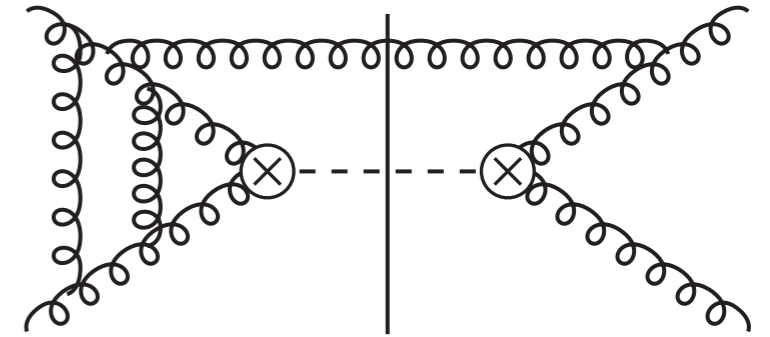
- At N3LO, there are five contributions:



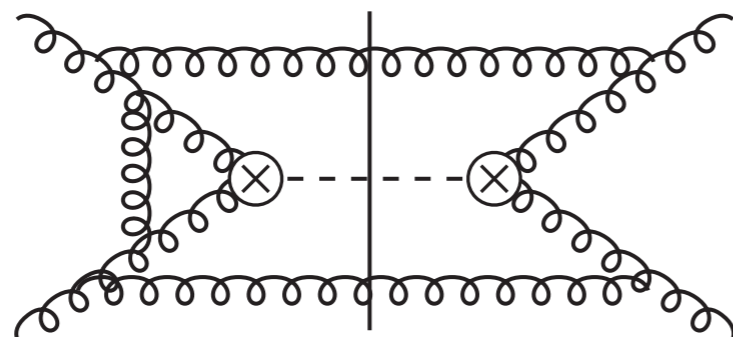
Triple virtual



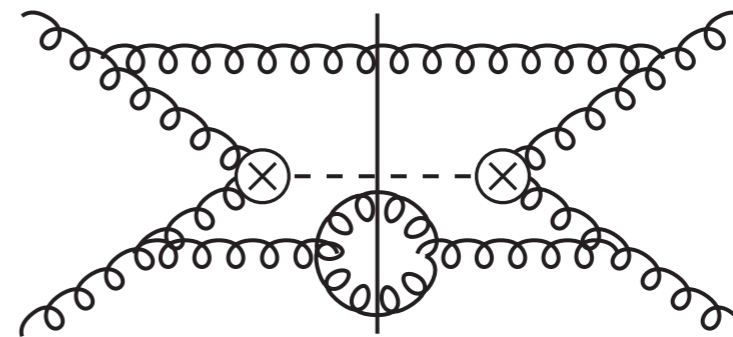
Real-virtual squared



Double virtual real



Double real virtual



Triple real

Higgs @ N3LO

- Goal: Compute the N3LO corrections to the inclusive gluon-fusion cross section in the large top-mass limit.
- First goal: Threshold expansion.

$$\hat{\sigma}(z) = \sigma_{-1} + \sigma_0 + (1 - z) \sigma_1 + \mathcal{O}(1 - z)^2$$

- ➔ First term completed 6 months ago.
 - ➔ Second term will be published soon.
 - ➔ More to come!
- Computations require a lot of cross talk between QCD and pure math!