

Gluon fusion into HH and ZH at NLO QCD

Thursday, November 10, 2022 5:20 PM (15 minutes)

We present the calculation of the virtual QCD corrections to $gg \rightarrow HH$ and $gg \rightarrow ZH$. The results are obtained combining an expansion in the small transverse momentum of the final particles with an expansion valid at high energies, and extending the range of validity of both expansions using Padé approximants. This approach can reproduce the available numerical results retaining the exact top quark mass dependence with an accuracy below the 1% level. In the case of ZH production, we use our results to obtain an analytical evaluation of the $gg \rightarrow ZH$ channel at NLO in QCD, including the effects of the change of the top quark mass renormalization scheme.

Type of talk

Theory

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