

Interference in Higgs-mediated ZZ+jet production

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Summary

We study interference effects in the production channel ZZ+jet, in particular focusing on the role of the Higgs boson. This production channel receives contributions both from Higgs-mediated diagrams via the decay $H \rightarrow ZZ$, as well as diagrams where the Z bosons couple directly to a quark loop. For an invariant mass of the Z pair larger than 300 GeV, we find that the interference in the ZZ + jet channel is qualitatively similar to interference in the inclusive ZZ channel. Moreover, the rates are sufficient to study these effects at the LHC once jet-binned data become available.

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