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Understanding di-Higgs production with light stops at the LHC

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Higgs pair production is a one-loop process, which is potentially sensitive to BSM physics, which can also enter at one loop. We look at the case of light stops in the MSSM and NMSSM. We developed a method, where factorise the cross section to a part depending only on the couplings and a part with all mass dependences and we can efficiently produce kinematical distributions for varying configurations. We can show how the di-Higgs signal arises from individual diagrams and their interferences. The methodology also allows one to revert the problem, i.e. starting from final state distributions one may extract estimates of the couplings involved.

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