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Four-fermion operators in Higgs production and decay

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In this talk, we compute the loop corrections to the single Higgs production and decay rates coming from 4 fermion operators of the third generation quarks, which could be tested by current and future ATLAS and CMS measurements of these processes.
These operators have sizeable effects to gluon fusion, $t\bar{t}H$ production cross-sections, as well as Higgs decays to gluons, photons and bottom quarks.
Indeed, we find that for some SM effective Field Theory operators and with the precision of current combined ATLAS and CMS Higgs data, those effects can strengthen the existing bounds from global fits to other processes.
Moreover, since single Higgs processes have been used to constrain the trilinear Higgs self-coupling, we study the correlation between this coupling and the 4 fermion operators fits.

Summary

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