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Non-resonant Higgs production with a singlet

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We investigate the collider signature of the real singlet extension of the standard model. A definitive correlation exists between the strength of the phase transition and the trilinear coupling of the Higgs to two singlet-like scalars, and hence between the phase transition and non-resonant scalar pair production involving the singlet at colliders. We study the prospects for observing these processes at the high luminosity LHC, focusing particularly on the associated production of singlet and the SM Higgs.

Summary

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