

Triple Higgs coupling, GWs and PBH as probes of 1st order EW Phase Transition

In this talk, I would like to discuss various phenomenological consequences of first order EW phase transition, which is required for successful EW baryogenesis scenarios. Using the NaHEFT which can describe non-decoupling property of new physics beyond the SM, we evaluate parameter regions in which conditions of strongly 1st order EW Phase Transition and completion of the phase transition are satisfied. Then, we discuss its prediction on the triple Higgs coupling, GW and PBH observations. We show that, in addition to the triple Higgs coupling and gravitational waves, PBH produced at the EW phase transition can also constrain some parameter region of the EFT.

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