

H-COUP : Higher order calculations of Higgs observables in various extended Higgs sectors

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Recently, we calculated one-loop corrected Higgs boson couplings in various extended Higgs models, such as the Higgs singlet model, two Higgs doublet models and the inert doublet model (H-COUP project). In this calculation, we used the improved on-shell scheme such that the gauge dependence does not appear in the renormalized Higgs boson couplings. Furthermore, applying this calculation of Higgs boson couplings, we have evaluated the Higgs boson decay widths including the NLO EW and QCD corrections. In this talk, we introduce the H-COUP project and discuss how we can discriminate extended Higgs models by detecting deviations from the standard model in Higgs observables at future precision measurements.

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Session Classification: Short Talks