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Probing extended Higgs sectors by the synergy between the LHC and the ILC

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We discuss a possibility that the parameter space of the two Higgs doublet model is significantly narrowed down by considering the synergy between direct searches for additional Higgs bosons at the (HL-)LHC and precision measurements of the Higgs boson properties at future e+e- colliders such as the International Linear Collider (ILC). We show that, in the case where the coupling constants of the discovered Higgs boson are slightly different from the predicted values in the standard model, most of the parameter space is explored by the direct searches of extra Higgs bosons, in particular for the decays of the extra Higgs bosons into the discovered Higgs boson, and also by the theoretical arguments such as perturbative unitarity and vacuum stability. [arXiv:2010.15057]

Time Zone

Asia/Pacific

Primary author: MAWATARI, Kentarou (Iwate U.)

Co-authors: AIKO, Masashi (Osaka University); KANEMURA, Shinya (Osaka University); KIKUCHI, Mariko (Kitakyushu College); SAKURAI, Kodai (Karlsruhe Institute of Technology); YAGYU, Kei (Osaka University)

Presenter: MAWATARI, Kentarou (Iwate U.)

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