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Precision Higgs Physics at Current and Future Colliders

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Studying the properties of the Higgs boson can be an important window to explore the physics beyond the Standard Model. In this work, we present studies on the implications of the Higgs precision measurements at future Higgs Factories on various types of two Higgs Doublet Models. We perform a global fit to various Higgs search channels to obtain the 95% C.L. constraints on the model parameter spaces of 2HDMs. We also compare the sensitivity of various future Higgs factories, namely, Circular Electron Positron Collider (CEPC), Future Circular Collider (FCC)-ee and International Linear Collider (ILC). We explore the discovery potential based on the hypothetical deviations in the precision data for the 2HDMs up to one-loop level.

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