Phenomenology 2018 Symposium



Contribution ID: 544

Type: parallel talk

Prospects of Exotic Higgs Decays in 2HDM at 100 TeV Collider

Tuesday 8 May 2018 17:45 (15 minutes)

After Higgs discovery, the detail structure of Higgs sector remains to be determined. A well motivated extension of the Standard Model Higgs sector is Two Higgs Doublet Model (2HDM), which predicts a pair of charged Higgs boson H^{\pm} , a CP-odd Higgs A and another CP-even Higgs H. The conventional searches focus on Higgs decays into a pair of SM fermions or gauge bosons. However, hierarchical 2HDM has exotic Higgs decays, like a heavy Higgs decays to a light Higgs plus vector boson, which reduces the reach of conventional search strategies, while offers alternative discovery channels. Sizable mass splitting, unitarity and vacuum stability require the mass of new scalar particles below 2 TeV. Thus a 100 TeV collider could probe entire hierarchical 2HDM parameter space. In this talk, we present an overview of non-SM heavy Higgs reach via exotic Higgs decays at a future 100 TeV collider.

Summary

Author: SONG, Huayang

Co-authors: KLING, Felix (University of Arizona); Prof. LI, HONGLEI; PYARELAL, Adarsh (University of Arizona); SU, Shufang (University of Arizona)

Presenter: SONG, Huayang

Session Classification: Higgs III