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The Type-I 2HDM: Distinctive Signals and the Road to Discovery

In the Type-I 2HDM, all the five new physical Higgs states can be fairly light, (100) GeV or less, without conflicting with current data from the direct Higgs boson searches and the B-physics measurements. In this talk, I will discuss how the new neutral and the charged Higgs bosons of the model can be simultaneously observable, resulting from the electro-weak (EW) production. Since the parameter space configurations where this is achievable are precluded in the other, more extensively pursued, 2HDM Types, experimental validation of our findings would be a clear indication that the true underlying Higgs sector in nature is the Type-I 2HDM.

Field of contribution

Phenomenology

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