

Probing extended Higgs models with the non-decoupling effect by future collider and cosmological experiments

Thursday, November 10, 2022 3:15 PM (15 minutes)

We discuss theoretical and experimental constraints on extended Higgs models with large quantum corrections. Such large quantum effects play an important role to realize the strongly first-order electroweak phase transition. We use a new Higgs EFT describing the strongly first-order phase transition in order to discuss model independent results. We show that the parameter region satisfying the sphaleron decoupling condition can be searched by future collider experiments, gravitational wave observations and primordial black hole observations. This talk is based on the following reference and work:

[1] S. Kanemura, R. Nagai and M. Tanaka, JHEP 06 (2022) 027 [arXiv: 2202.12774].

[2] K. Hashino, S. Kanemura, T. Takahashi and M. Tanaka, Work in progress.

Type of talk

Theory

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