Electroweak Symmetry Restoration in Extended Higgs Sectors via Domain Walls

Thursday 6 June 2024 17:20 (20 minutes)

Domain walls are a type of topological defects that can arise in the early universe after the spontaneous breaking of a discrete symmetry. This occurs in several beyond Standard Model theories with an extended Higgs sector such as the Next-to-Two-Higgs-Doublet model (N2HDM). In this talk I will discuss the domain wall solution related to the singlet scalar of the N2HDM as well as demonstrate the possibility of restoring the electroweak symmetry in the vicinity of the domain wall. Such symmetry restoration can have profound implications on the early universe cosmology as the sphaleron rate inside the domain wall would, in principle, be unsuppressed compared with the rate outside the wall.

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Session Classification: Parallel Session PII.5