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## Electroweak Symmetry Restoration in the N2HDM via Domain Walls

Domain walls are a type of topological defect 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. We also demonstrate the possibility of having a hypercharge field condensate localized at the center of the wall starting from random initial conditions for the Goldstone modes after the electroweak phase transition.

## Secondary track

T08 - Higgs Physics

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