

Exploring Electroweak Phase Transition and Collider Signatures in Two-Higgs-Doublet Models

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We investigate the electroweak phase transition (EWPT) and collider phenomenology in the Two-Higgs-Doublet Models (2HDM). The interplay between the thermal properties of the scalar potential and experimental constraints offers a promising framework to explore beyond the Standard Model physics. We analyze scenarios that may realize a strong first-order phase transition (SFOPT), which is essential for electroweak baryogenesis, and examine their possible signatures at current and future colliders.

Primary author: LEE, Soojin (Konkuk University)

Presenter: LEE, Soojin (Konkuk University)

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