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A map of First-Order Electroweak Phase Transitions in the SMEFT

Tuesday, 22 October 2024 14:00 (15 minutes)

In this talk, we present a map of first-order electroweak phase transitions within the Standard Model Effective Field Theory (SMEFT), using modern dimensionally reduced effective field theory methods with careful attention to scale hierarchies and power-counting techniques. While previous works have focused on a few specific cases, we comprehensively map all possible scenarios, uncovering new mechanisms beyond those previously identified. By also performing a global likelihood scan, we identify parameter regions consistent with experimental and theoretical constraints and a first-order transition.

Summary

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