Contribution ID: **51** Type: **Regular talk**

2-step FOEWPT in G2HDM

Wednesday, 25 June 2025 11:00 (30 minutes)

We investigate the possibility of a strong first-order electroweak phase transition (FOEWPT) during the early universe within the framework of the gauged two-Higgs doublet model (G2HDM) and explore its detectability through stochastic gravitational wave signals. The results indicate that forthcoming detectors such as BBO, LISA, DECIGO, TianQin and Taiji could potentially detect the gravitational wave signals generated by the FOEWPT. Additionally, we find that the parameter space probed by gravitational waves can also be searched for in future dark matter direct detection experiments, in particular those designed for dark matter masses in the sub-GeV range using the superfluid Helium target detectors.

Please choose your topic

Gravity & Particle Physics

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Session Classification: Gravitational aspects of particle physics