

# Phenomenology 2021 Symposium



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## Collider and GW complementarity in the 2HDM

*Tuesday 25 May 2021 15:00 (15 minutes)*

We study electroweak phase transition and resultant GWs of a CP conserving 2HDM with a softly broken  $Z_2$  symmetry. We analysed the parameter space of both type I and type II 2hdm without relying on any decoupling limit. We observe  $M_{H^\pm} \approx M_H$  or  $M_{H^\pm} \approx M_A$  favours SFOEWPT in 2HDM. In addition to di-Higgs production, scalar to fermion decay channel is also important to probe phase transition behaviour in 2HDM. We also comment about the shape of potential leading to SFOEWPT in 2hdm.

### Summary

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