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Alignment limit and strong first-order electroweak phase transition in extended Higgs sectors

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In the alignment limit of extended Higgs sectors the couplings of one of the neutral Higgs bosons of the model are exactly equal to the couplings of the Higgs boson of the Standard Model at lowest order.
Using the different Yukawa types of a Two-Higgs doublet model as an example and taking into account all relevant experimental and theoretical constraints, it is analysed to what extent the parameter region close to the alignment limit is correlated with the parameter region giving rise to a strong first electroweak phase transition in the early universe. Prospects for probing these parameter regions at future runs of the LHC and future gravitational wave observatories will be discussed.

Primary author: NATH, Debankana

Presenter: NATH, Debankana

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