

# Probing physics behind the electroweak symmetry breaking at future gravitational wave interferometers and future collider experiments

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Revealing dynamics of the electroweak phase transition is essential for probing new physics at the early Universe such as electroweak baryogenesis, which requires strongly first order phase transition. We compute the spectrum of gravitational waves from first order phase transition in models with additional isospin singlet scalars with and without classical scale invariance, and in the extended Higgs model with a real singlet. Predicted deviations in various Higgs boson couplings are also evaluated. We show that these models can be tested by the synergy of the measurements of the Higgs boson couplings at the LHC, the measurement of the triple Higgs boson coupling at future electron-positron colliders and the observation of gravitational waves at future interferometers such as eLISA and DECIGO. This talk is based on  
Kakizaki, Kanemura, Matsui, PRD92 (2015) no.11,115007;  
Hashino, Kakizaki, Kanemura, Matsui, PRD94 (2016) no.1, 015005;  
Hashino, Kakizaki, Kanemura, Ko, Matsui, arXiv:1609.00297.

## Summary

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