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Gravitational waves from the first order electroweak phase transition in the Z_3 symmetric singlet scalar model

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Content :

Among various scenarios of baryon asymmetry of the Universe, electroweak baryogenesis is directly connected with physics of the Higgs sector. We discuss spectra of gravitational waves which are originated by the strongly first order phase transition at the electroweak symmetry breaking, which is required for a successful scenario of electroweak baryogenesis. In the Z_3 symmetric singlet scalar model, the significant gravitational waves are caused by the multi-step phase transition. We show that the model can be tested by measuring the characteristic spectra of the gravitational waves at future interferometers such as LISA and DECIGO. This talk is based on arXiv:1706.09721 in collaborated with Zhaofeng Kang and Pyungwon Ko.

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