

What does the detection of non-Gaussianity tell us about the standard model of particle physics

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- ✓ Recent results of LHC strongly suggests the establishment of the standard model of particle physics (SM).
 - ✓ The study of physics beyond the SM now enters the next stage.
 - ✓ What can we learn from CMB and other cosmological observations?
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- ✓ One of the questions would be whether “the SM Higgs can be responsible for inflation and the origin of the density perturbation?”
 - ✓ We proposed “**generalized Higgs inflation**” which is the most general inflation model that is driven by the potential energy of the SM Higgs field and does not assume any other field contents or sector outside the SM.
 - ✓ We may ruled out all the possibility of Higgs inflation from CMB data for the first time and may say “**PHYSICS BEYOND THE SM is needed** to explain the birth of the Universe !”