

# Scalars 2015

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## Effect of interaction terms on parametric resonance

### Content :

It is known that non-perturbative particle production are induced if the particles couple to a time-varying background field, such as the preheating theory. Especially, bosonic particles can grow exponentially due to parametric resonance. We have investigated this mechanism with a interacted system, in which there are fields without direct coupling to the background but with coupling to other fields. As our conclusion, it is possible to induce particle production even if particles do not couple to the background directly. Such particles are produced through the interactions with other fields, which couple to a varying background. In this talk, we will demonstrate with a simple model and show the results of parametric resonance.

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