

Decay of the standard model Higgs into the $SU(2)\times U(1)$ gauge fields after inflation

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I will discuss the out-of-equilibrium dynamics of the Standard Model after inflation, when the Higgs is weakly coupled to the inflationary sector. During inflation the Higgs forms a condensate, which oscillates short after inflation ends, transferring most of its energy to the $SU(2)\times U(1)$ gauge fields via parametric resonance. I have studied this process with classical lattice simulations, including explicitly the non-Abelian Higgs-gauge interactions in the lattice. I will describe and quantify the main time scales, energy ratios, and field spectra, and compare our results with an equivalent Abelian-Higgs modelling.

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