

Higgs boson and the cosmos

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PAPU Meeting

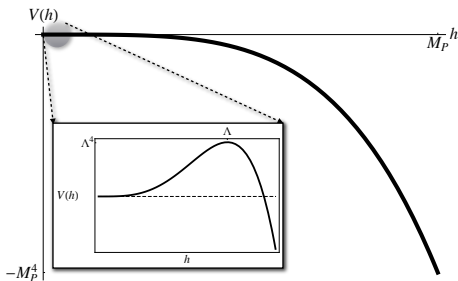
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The Problem

Standard model Higgs potential:



Cosmological puzzles:

- ▶ Who/what put the Higgs in the EW vacuum?
- ▶ Why/How it remained there during universe evolution (read: inflation)?

My research

The problem can be solved by a minimal assumption of new physics:

1. Higgs-inflaton coupling: $\lambda_{h\phi} h^2 \phi^2$
2. Higgs-gravity coupling: $\xi h^2 R$

Both are generated by loop corrections!

Not the end of the story...

These couplings produce many Higgs particles after inflation, this can trigger the decay into the deeper minimum.

THANK YOU