

Particle Cosmology after Planck



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**Particle Cosmology
after Planck**

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Spacetime curvature and the Higgs stability during inflation

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It is currently widely accepted that for a high scale of inflation the EW Higgs vacuum is unstable during inflation due to large fluctuations of order H . However, this conclusion is reached by neglecting potentially significant effects induced by the spacetime curvature. In this talk I review the derivation of a one-loop SM Higgs effective potential in curved space and discuss its implications. In particular I will show that generally a large curvature mass is generated which can stabilize the potential against fluctuations induced by inflation.

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