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Horizon Feedback Inflation

Friday, 12 January 2018 09:00 (10 minutes)

We consider the effect of the Gibbons-Hawking radiation on the inflaton in the situation where it is coupled to a large number of spectator fields. We argue that this will lead to two important effects - a thermal contribution to the potential and a gradual change in parameters in the Lagrangian which results from thermodynamic and energy conservation arguments. We present a scenario of hilltop inflation where the field starts trapped at the origin before slowly experiencing a phase transition during which the field extremely slowly moves towards its zero temperature expectation value. We show that it is possible to obtain enough e-folds of expansion as well as the correct spectrum of perturbations without hugely fine-tuned parameters in the potential (albeit with many spectator fields). We also comment on how initial conditions for inflation can arise naturally in this situation.

What would be the preferred length of your talk?

10 minutes + questions

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