The Big Bang in the Lab: Table Top Experiments of Reheating After Inflation

Jonathan Braden

Canadian Institute for Theoretical Astrophysics
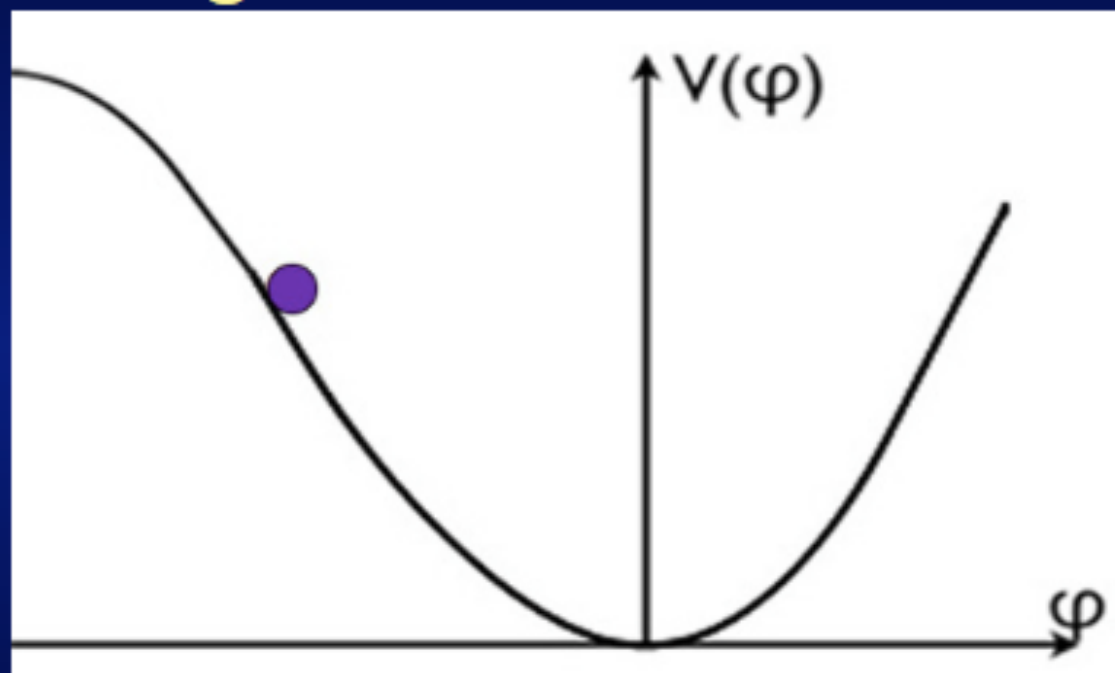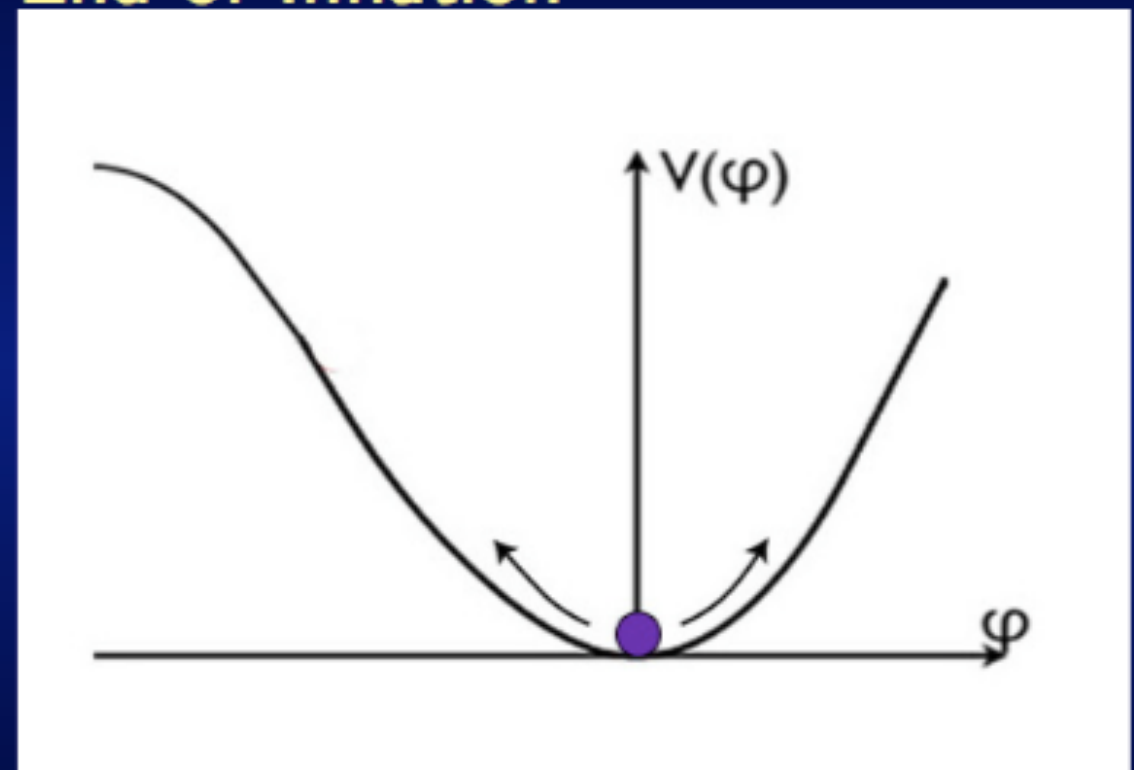
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Lightning Review of Inflation and Preheating

$$\mathcal{L} = -\frac{G_{IJ}(\vec{\phi})}{2}\partial_\mu\phi^I\partial^\mu\phi^J - V(\vec{\phi})$$

During Inflation

End of Inflation

- ▶ Subhorizon Homogeneity
- ▶ (Small) Superhorizon Inhomogeneity

$$\left[\delta\phi, \delta\dot{\phi}\right] \neq 0$$

$$\Longrightarrow \langle|\delta\tilde{\phi}_k|^2\rangle, \langle|\delta\dot{\tilde{\phi}}_k|^2\rangle > 0$$

- ▶ Variety of instabilities