Perturbed Universes and Inflationary Models

MSci. Thesis

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2   Abstract

The aim of this project is to investigate inflationary models and discover new models that give near scale invariance in accordance with Cosmic Microwave Background data.

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The evolution of scalar fields is described by the Klein [1] Gordon Equation

$$\ddot{\phi} + 3H\dot{\phi} + V'(\phi) = 0 \tag{1}$$

$$H^2 = \frac{8\pi}{3m_{pl}^2}[\frac{1}{2}\dot{\phi}^2 + V(\phi)] \tag{2}$$

7 Conclusion

References

[1] Herbert Goldstein. *Classical mechanics.* Addison-Wesley, Reading, Mass. ; Wokingham, 2nd ed. edition, 1980. ID: 44IMP$_A LMA_D S$2141267570001591.