

Inflationary perturbations in Eddington-inspired Born-Infeld gravity

Inyong Cho*

Seoul National University of Science and Technology

E-mail: iycho@seoultech.ac.kr

We briefly introduce the inflation model driven by a massive scalar field in Eddington-inspired Born-Infeld gravity [1] investigated in [2]. We present the recent results of the tensor perturbation in this model investigated in [3]. For short wave-length modes, the perturbation feature is very similar to that of the usual chaotic inflation. For long wave-length modes, the perturbation exhibits a peculiar rise in the power spectrum which may leave a signature in the cosmic microwave background radiation. We also briefly discuss the scalar perturbation in this model.

References

- [1] M. Banados and P. G. Ferreira, *Eddington's theory of gravity and its progeny*, Phys. Rev. Lett. **105**, 011101 (2010) [arXiv:1006.1769 [astro-ph.CO]].
- [2] I. Cho, H.-C. Kim and T. Moon, *Precursor of Inflation*, Phys. Rev. Lett 111, **071301** (2013) [arXiv:1305.2020 [gr-qc]].
- [3] I. Cho and H.-C. Kim, *Inflationary Tensor Perturbation in Eddington-inspired Born-Infeld gravity*, arXiv:1404.6081 [gr-qc].

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*Speaker.