

Observational constraints on viable $f(R)$ gravity models

Tuesday, 26 July 2016 15:00 (15 minutes)

Summary

We investigate the matter power spectra in the power law and exponential types of viable $f(R)$ theories along with massive neutrinos. The enhancement of the matter power spectrum is found to be a generic feature in these models. In particular, we show that in the former type, such as the Starobinsky model, the spectrum is magnified much larger than the latter one, such as the exponential model. A greater scale of the total neutrino mass is allowed in the viable $f(R)$ models than that in the Λ CDM one. We obtain the constraints on the neutrino masses by using the CosmoMC package with the modified MGCAMB.

Based on (arXiv number)

arXiv:1411.3813

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Session Classification: Dark Energy and Modified Gravity

Track Classification: Dark Energy and Modified Gravity