

IberiCOS 2022



Contribution ID : 45

Type : **not specified**

Can $f(Q)$ gravity challenge Λ CDM?

Thursday, 5 May 2022 17:00 (15)

Despite the Λ CDM's overall success, there are still some theoretical and observational problems. Looking beyond Λ CDM is thus a priority. Here we show an alternative scenario of the non-metricity $f(Q)$ -gravity which reproduces an exact Λ CDM background expansion history while modifying the evolution of linear perturbations. I will present the phenomenology and the observational constraints employing Markov chain Monte Carlo (MCMC) methods with the Cosmic Microwave Background (CMB) radiation, baryonic acoustic oscillations (BAO), redshift-space distortions (RSD), supernovae type Ia (SNIa), galaxy clustering (GC) and weak gravitational lensing (WL) measurements. I show the constraints on the parameter of the model controlling the modifications to the gravitational interaction at the linear perturbation level and how and why the model is statistically preferred by data over the Λ CDM.

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