

Dark Matter and Stars: Multi-Messenger Probes of Dark Matter and Modified Gravity

Contribution ID: 91

Type: **not specified**

Observational constraints on $f(Q)$ cosmologies

Friday, 5 May 2023 11:00 (40 minutes)

Modified gravity theories of the $f(Q)$ theories have aroused some recent interest as candidates to replace Einstein's prescription for gravity. These scenarios present new degrees of freedom in the action due to the free torsionless connection allowed by the nonmetricity tensor Q . In this talk we discuss some specific classes of $f(Q)$ theories. We carry out a Bayesian statistical bunch of tests relying upon background data. These include Type Ia supernovae luminosities and direct Hubble data (from cosmic clocks), along with cosmic microwave background shift and baryon acoustic oscillations data. Our discussion is multifaceted and we focus on comparisons with the (concordance) Λ CDM setup. Our results indicate that at the current precision level the best fits of the $f(Q)$ models explored do not make them really observationally preferred.

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