



Testing model independent modified gravity with future large scale surveys

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Model-independent parametrisations of modified gravity have attracted a lot of attention over the past few years and numerous combinations of experiments and observables have been suggested to constrain the parameters used in these models. Galaxy clusters have been mentioned, but not looked at as extensively in the literature as some other probes. Here we look at adding galaxy clusters into the mix of observables and examine how they could improve the constraints on the modified gravity parameters. In particular, we forecast the constraints from combining Planck satellite Cosmic Microwave Background (CMB) measurements and Sunyaev-Zeldovich (SZ) cluster catalogue with a DES-like weak lensing survey. We find that cluster counts significantly improve the constraints over those derived using CMB and WL. We then look at surveys further into the future, to see how much better it may be feasible to make the constraints.

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