

Abstract Submitted
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Modification to the Luminosity Distance Redshift Relation in Modified Gravity Theories ERAN ROSENTHAL, EANNA FLANAGAN, IRA WASSERMAN, Cornell — We derive an expression for the luminosity distance as a function of redshift for a flat Robertson-Walker spacetime perturbed by arbitrary scalar perturbations possibly produced by a modified gravity theory with two different scalar perturbation potentials. Measurements of the luminosity distance as function of redshift provide a constraint on a combination of the scalar potentials and so they can complement weak lensing and other measurements in trying to distinguish among the various alternative theories of gravity.

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