

Modified gravity imprints in galaxy clusters

Extending General Relativity by adding extra degrees of freedom is a popular approach to explain the accelerated expansion of the universe and to build high energy completions of the theory of gravity. The presence of such new degrees of freedom is, however, tightly constrained from observations and experiments. The viability of a given modified theory of gravity therefore strongly depends on the existence of screening mechanisms that suppresses the extra degrees of freedom in certain scales and regimes. I describe how one can use nonlinear structure formation to probe extensions to General Relativity, and will present a set of astrophysical observables that could give smoking guns of screening mechanism at galaxy and cluster scales.

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