

TH Colloquium: Cosmological Tests of Gravity

Wednesday, 16 August 2017 14:00 (1 hour)

Extensions of Einstein's theory of General Relativity are under investigation as a potential explanation of the accelerating expansion rate of the universe. I'll present a cosmologist's overview of attempts to test these ideas in an efficient and unbiased manner.

I'll start by introducing the bestiary of alternative gravity theories that have been put forwards. This proliferation of models motivates us to develop model-independent, agnostic tools for comparing the theory space to cosmological data. I'll introduce the effective field theory for cosmological perturbations, a framework designed to unify modified gravity theories in terms of a manageable set of parameters. Having outlined the formalism, I'll talk about the current constraints on this framework, and the improvements expected from the next generation of large galaxy clustering, weak lensing and intensity mapping experiments.

Presenter: BAKER, Tessa