

Nonlinear structure in general modified gravity models

Friday 10 September 2021 15:50 (20 minutes)

With the advent of surveys such as the Legacy Survey of Space and Time (LSST), there will be opportunities in the near future to study nonlinear aspects of modified gravity (MG) theories through weak lensing and galaxy clustering measurements. These will be important in constraining the theory space for MG theories with screening effects, which are manifestly nonlinear. As the typical method for studying nonlinear effects, N-body simulation, is expensive computationally and temporally, an alternative method is desirable. In this talk, I will show our current progress in being able to solve the background equations of motion for any model in the reduced-Horndeski framework and produce its power spectrum, valid on mildly nonlinear scales, using the Co-moving Lagrangian Acceleration (COLA) numerical scheme.

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Session Classification: Regular Sessions