

The impact of systematic effects on constraints for modified gravity and cosmological models

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The high precision and vast volume of data from upcoming galaxy surveys—such as Euclid and the Rubin Observatory Legacy Survey of Space and Time (LSST)—and Cosmic Microwave Background (CMB) experiments like the Simons Observatory, will enable the use of CMB gravitational lensing potential measurements and their cross-correlations with the surveys to shed light on observed cosmological tensions. These datasets will allow us to constrain extensions of the standard cosmological model with unprecedented precision. In this talk, I will present an investigation into the systematic effects that can have influence on robustness of constraints on modified gravity models and dynamical dark energy scenarios. Specifically, I will focus on likelihood-based analyses and the biases introduced by photometric redshift errors in galaxy surveys, residuals of Galactic foregrounds in CMB anisotropy maps, and lensing magnification effect.

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