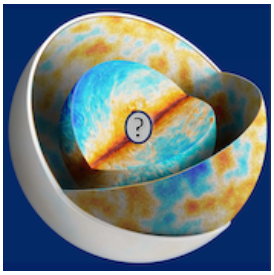

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Forecasts on small-scale primordial non-Gaussianity through cross-correlations between CMB and μ-distortion anisotropies

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Multi-field inflation models predict sizeable *non-Gaussian* primordial perturbations and consequently *anisotropic* μ-type spectral distortions of the cosmic microwave background (CMB) blackbody. While CMB anisotropies allow us to probe primordial non-Gaussianity at wavenumbers $k \simeq 0.05\,\mathrm{Mpc}^{-1}$, μ-distortion anisotropies are related to non-Gaussianity of primordial perturbation modes with much larger wavenumbers, $k\ 740\,\mathrm{Mpc}^{-1}$. Through cross-correlations between CMB anisotropies and μ-distortion anisotropies, one can therefore shed light on the aforementioned inflation models. We will discuss the capabilities of a future CMB satellite imager like *LiteBIRD* to measure μT and μE cross-power spectra between anisotropic μ-distortions and CMB temperature and E-mode polarization anisotropies in the presence of foregrounds, and present *LiteBIRD* forecasts on $f^{\mu}_{\mathrm{NL}}(k \simeq 740\,\mathrm{Mpc}^{-1})$. We will show that μE cross-correlations with CMB polarization actually provide more constraining power on f^{μ}_{NL} than μT cross-correlations in the presence of foregrounds, and that the joint combination of μT and μE observables adds further leverage to the detection of small-scale primordial non-Gaussianity with future CMB imagers.

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