



Contribution ID: 8

Type: **not specified**

Probing axion dark energy using late-time polarized SZ with CMB

Monday, July 18, 2022 8:40 PM (20 minutes)

Next generation cosmic microwave background (CMB) experiments and galaxy surveys will generate a wealth of new data with unprecedented precision on small scales. Correlations between CMB anisotropies and the galaxy density carry valuable cosmological information about the largest scales, creating novel opportunities for inference. It is possible to foresee a cosmological paradigm shift, in which reconstruction of the gravitational weak-lensing potential, velocity fields and the remote quadrupole field will provide the most precise tests of fundamental physics. The use of the second-order effects in the CMB to extract this information motivate a strong push towards low noise, high resolution frontiers of the upcoming fourth generation CMB experiments. In this colloquium, I will discuss the prospects to use small-scale polarized Sunyaev Zel'dovich (pSZ) effect to probe the axion landscape and show how pSZ can distinguish between axion models where axion serves either as dark energy or as dark matter.

In-person or Virtual?

In-person

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Session Classification: Poster Session