

Toward Cosmological Concordance with New Physics in the Dark Sector

Thursday 8 September 2022 10:00 (30 minutes)

I will discuss recent and ongoing work focused on attempts to restore concordance amongst cosmological data sets, motivated by discrepancies between some measurements of the cosmic expansion rate (H_0) and the matter clustering amplitude (S_8). Particular attention will be paid to models invoking new physics in the high-redshift universe, including quasi-accelerating early dark energy models (and extensions thereof) and generalized decaying particle scenarios. In particular, I will discuss constraints on these models derived using the latest CMB measurements from the Atacama Cosmology Telescope (ACT) and from the Planck satellite, amongst other data sets. I will conclude with a look ahead to forthcoming CMB data from ACT, which will provide a powerful test of these scenarios in the low-noise, high-resolution regime.

Presenter: Prof. HILL, Colin (Columbia University)