



ID de Contribution: 4

Type: Non spécifié

Searching for physics beyond the standard model with Planck, SPT, and ACT data.

lundi 20 juin 2022 14:30 (40 minutes)

Measurements of the CMB temperature and polarisation power spectra provide high-precision constraints on cosmological parameters and point to a value for the expansion rate today 5 sigma lower than what supernovae and distance-ladder analyses find.

While the latter analyses measure the Hubble constant directly, we must assume a given cosmological model to infer the expansion rate from CMB data.

Hence, changes to physics at early times away from standard model dynamics result in different parameter constraints from CMB data - and provide a possible pathway to resolving the Hubble tension.

In this talk, I explore constraints on two such models, primordial magnetic fields and early dark energy using the latest Planck, South Pole Telescope (SPT), and Atacama Cosmology Telescope data.

I present new limits on primordial magnetic fields and show how a 3.3σ hint for early dark energy emerges in the CMB data.

From these results I motivate the joint analysis of CMB temperature and polarisation power spectra.

I present the status of this ongoing analysis for SPT data and highlight the internal consistency of the data set.

Auteur principal: BALKENHOL, Lennart (University of Melbourne)

Orateur: BALKENHOL, Lennart (University of Melbourne)

Classification de Session: Session #1