Contribution ID: **350** Type: **Talk in a parallel session**

Robust neutrino mass weighing with high redshift mass maps

Tuesday, 9 July 2024 17:50 (25 minutes)

CMB lensing provides a powerful way to measure the mass of the neutrinos. Traditional analyses of CMB lensing can suffer from biases in neutrino mass constraints if the wrong dark energy model or parametrization is assumed. In this talk, I will present a method to remove low-redshift contributions from CMB lensing mass maps, enhancing their sensitivity to high-redshift structures and becoming robust to low-redshift modelling. This is achieved by subtracting appropriately scaled galaxy density maps, effectively nulling the low-redshift structure through a model-insensitive procedure similar to delensing. This results in a high-redshift-only mass map that can uniquely probe the growth of structure at very high redshifts while also providing powerful constraints on neutrino mass.

Primary author: QU, Frank

Presenter: QU, Frank

Session Classification: Unveiling neutrino secrets through cosmology: current status and future developments

Track Classification: Neutrinos (NU): Unveiling neutrino secrets through cosmology: current status and future developments