



Contribution ID: 311

Type: **Talk in the parallel session**

New Planck tSZ map and its cosmological analysis

Tuesday, 6 July 2021 11:30 (12 minutes)

The thermal Sunyaev-Zeldovich (tSZ) effect is produced by the inverse Compton scattering of cosmic microwave background (CMB) photons by hot electrons, particularly in galaxies clusters. It has been used as a powerful probe to constrain the cosmological parameters, given its particular sensitivity to σ_8 and ω_m .

We present a new all-sky tSZ map constructed from the latest Planck PR4 data released in 2020 with the MILCA algorithm. We will review the obtained improvements in this tSZ map in terms of signal-to-noise and resolution with respect to the map produced by the Planck collaboration in 2015. We will also present the results of the cosmological analysis with this new tSZ map.

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Session Classification: New Horizons in Cosmology with CMB Spectral Distortions

Track Classification: Cosmic Microwave Background: New Horizons in Cosmology with CMB Spectral Distortions