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Cluster cosmology: impact of the mass calibration on the σ_8 tension.

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In this talk, we discuss cosmological constraints inferred from detection of galaxy clusters in the mm-wavelengths (through the thermal Sunyaev-Zeldovich effect), using Planck observations.

We focus in particular on the well known σ_8 tension. We provide a novel analysis of Planck clusters (also in combination with the power spectrum of the total tSZ signal), showing that constraints are now fully in agreement with results from CMB primary anisotropies.

Nevertheless, a discrepancy is still present when comparing results on the mass bias parameter.

We therefore focus on how the cluster mass evaluation stands as the major source of systematic effects in current cluster cosmology and how an incorrect mass calibration can largely bias the cosmological results.

We highlight that the current remaining tension between tSZ clusters and CMB anisotropies can be due to an incorrect description of the interplay between astrophysics and cosmology when describing the cluster formation and evolution.

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Session Classification: Status of the H_0 and Σ_8 Tensions: Theoretical Models and Model-Independent Constraints

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