



ID de Contribution: 43

Type: **Non spécifié**

Combining Planck, SPT and ACT

lundi 13 octobre 2025 17:30 (20 minutes)

We present a coherent cosmological analysis that combines data from the Planck satellite, the Atacama Cosmology Telescope (ACT), and the South Pole Telescope (SPT). We construct a unified likelihood that jointly fits temperature and polarization power spectra from all three datasets, implementing consistent modeling of Galactic and extragalactic foregrounds as well as instrumental systematics. This approach reduces reliance on external priors and improves the robustness of parameter estimation. In particular, the joint framework delivers tighter constraints on Λ CDM parameters, improving precision by up to $\sim 20\%$ relative to Planck alone. We further show that both Λ CDM and simple model extensions remain highly robust against variations in astrophysical foreground assumptions, and that several previously reported tensions (such as the preference for nonzero curvature, $A_L > 1$, or inconsistencies in τ between TT and low- ℓ EE) are significantly reduced or eliminated. Overall, this work demonstrates the feasibility and robustness of combining the three major CMB datasets, and highlights the central role of foreground modeling for the science goals of upcoming high-sensitivity CMB surveys

Auteur: TRISTRAM, Matthieu (IJCLab, CNRS)

Orateur: TRISTRAM, Matthieu (IJCLab, CNRS)

Classification de Session: CMB results and analysis