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The cosmological analysis of Planck LFI raw data from BeyondPlanck and Beyond

Friday, 12 July 2024 17:00 (23 minutes)

In this talk I will present cosmological results from the recent work carried on by the BeyondPlanck collaboration: a Bayesian end-to-end analysis of Planck LFI raw data. This novel approach allowed to seamlessly go through all the steps of a classical CMB analysis pipeline in an integrated framework: commander3. Cosmological results we produced are therefore naturally marginalized over all the model parameters' uncertainty, including instrumental parameters and foreground residual from component separation. The final CMB analysis includes a high multipole likelihood, based on full-sky foreground cleaned maps produced by imprinting constrained CMB realizations in the masked region of the sky, and a large scale map-based CMB likelihood that for the first time implements a sampled based computation of a noise covariance matrix that accounts for all the uncertainty sources propagated in the analysis pipeline. The effort from the BeyondPlanck community is being carried on in the much wider Cosmoglobe project, whose goals are being presented during this very conference.

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