

Cosmological Results from Planck PR4 (NPIPE) with CamSpec

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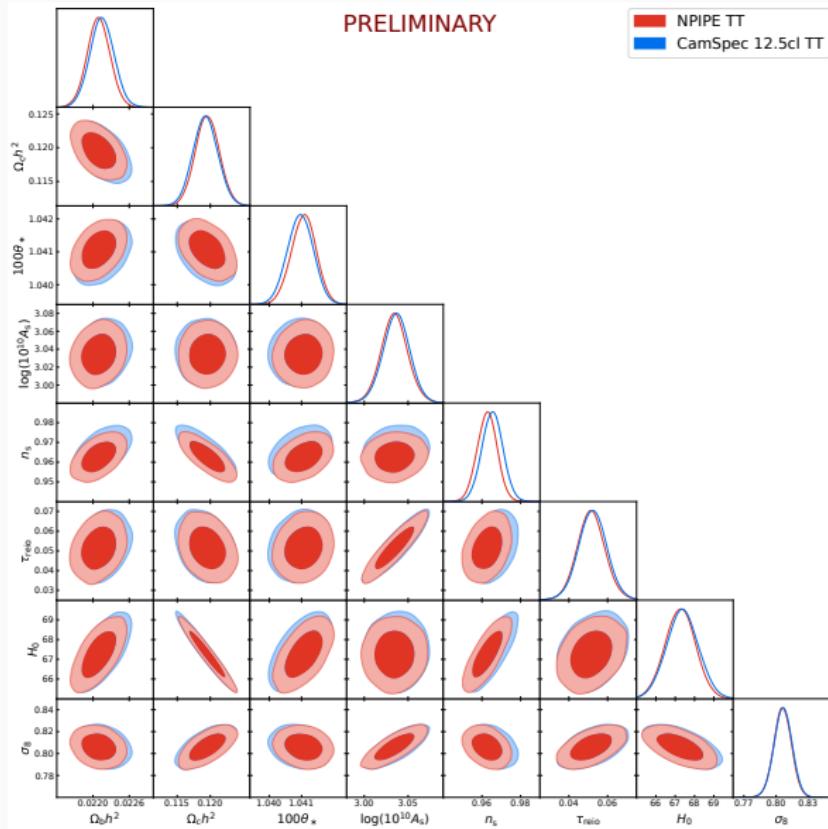
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With George Efstathiou and Steven Gratton

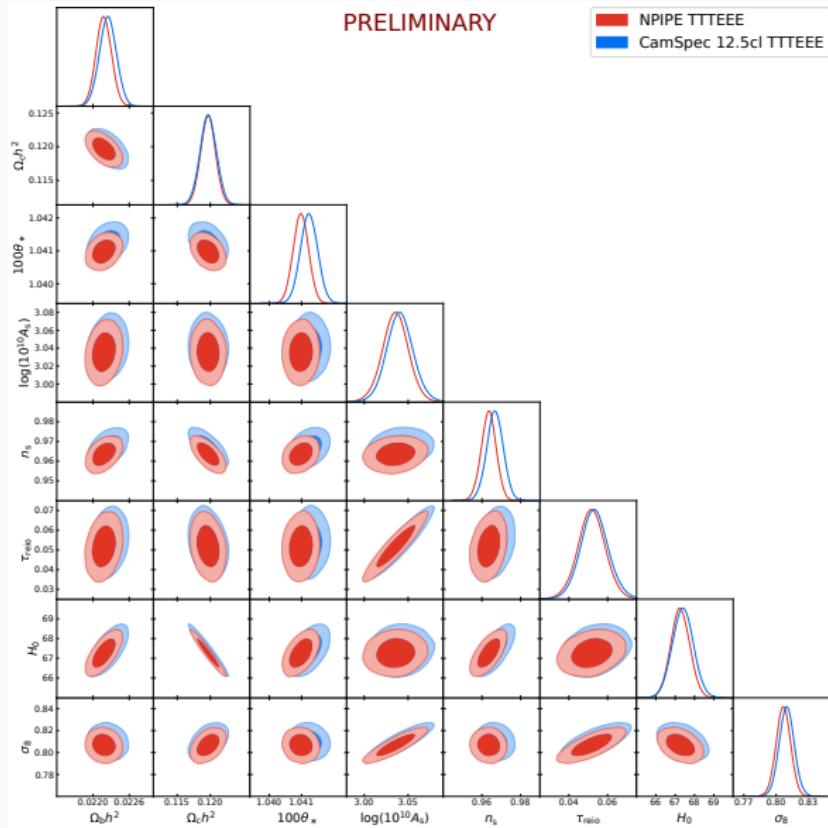
- NPIPE is a new (2020) pipeline to produce *Planck* maps at multiple frequencies from raw bolometer data
- New approach to calibrating time-ordered data
- 8% more data from repointing maneuvers
- Different handling of 4K-cooler lines and glitches
- Detector-set splits A and B rather than half-missions (HM1, HM2)

- Planck 2018 used both `Plik` and `CamSpec` likelihoods. Updated `CamSpec` (“RD12”) described in Efstathiou & Gratton (2019)
- For `NPIPE` we make analogs of `CamSpec` 12.5cl ($f_{\text{sky}} = 80\%$) likelihoods with the `NPIPE` maps
- $\ell > 30$ pseudo- C_ℓ power spectra and covariances
- Recalculate per-frequency calibration factors and polarization efficiencies to minimize inter-frequency residuals

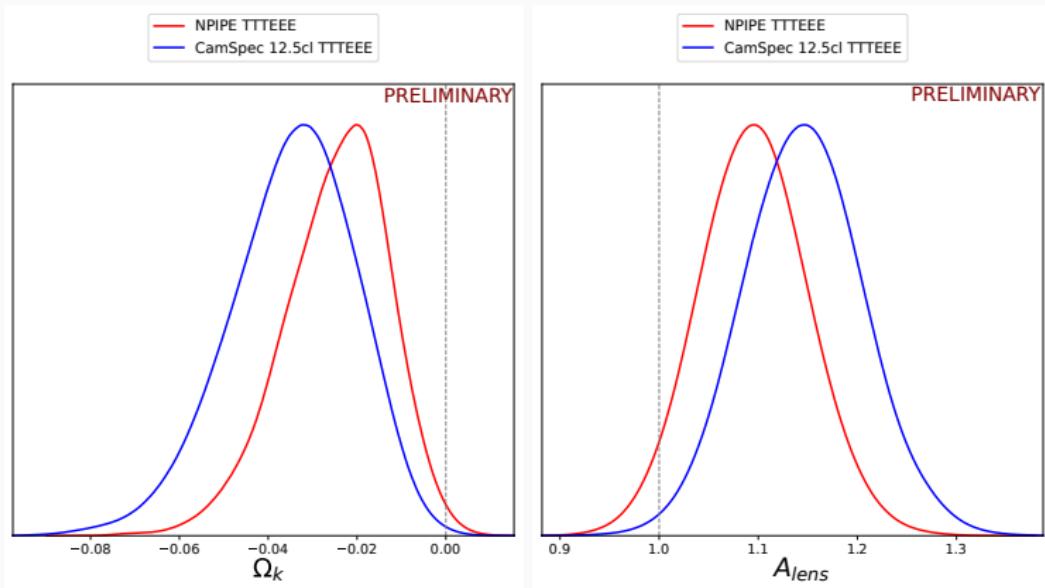
NPIPE vs RD12.5 Λ CDM TT



NPIPE vs RD12.5 Λ CDM TTTEEE



Extended Models



	Ω_k	A_L
NPIPE TTTEEE	$-0.024^{+0.013}_{-0.010} \text{ (} 1.8\sigma < 0 \text{)}$	$1.093 \pm 0.056 \text{ (} 1.7\sigma > 1 \text{)}$
RD12.5 TTTEEE	$-0.035^{+0.017}_{-0.013} \text{ (} 2.0\sigma < 0 \text{)}$	$1.147 \pm 0.062 \text{ (} 2.4\sigma > 1 \text{)}$

Conclusions

- Parameter-level results show a cosmology consistent with *Planck* 2018 and Efstathiou & Gratton 2019 despite different analysis choices
- TT & TE spectra very consistent; possible deviations in EE under investigation
- No evidence in NPIPE for statistically significant deviation from $A_L = 1$ or $\Omega_K = 0$
- Get in touch! Email: er510@cam.ac.uk