

# Pico

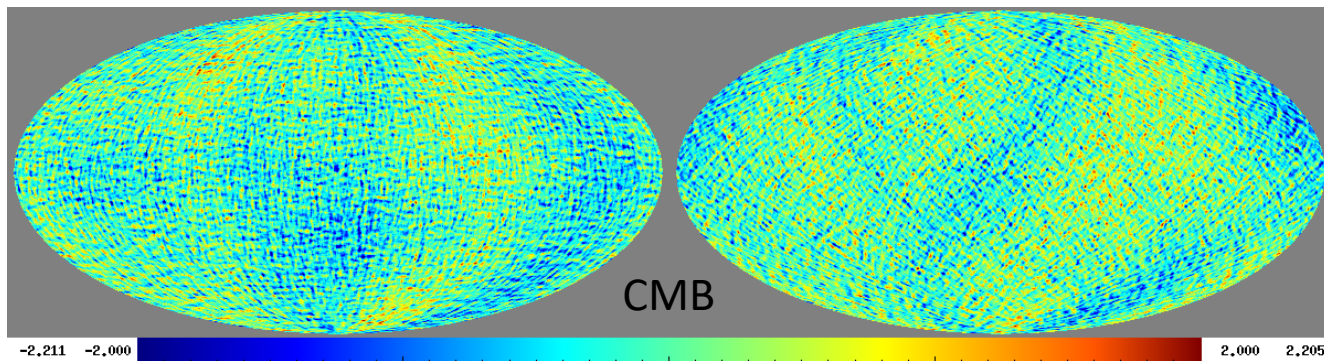
Commander updates 17.9.2020

Ragnhild Aurlien and the Oslo group

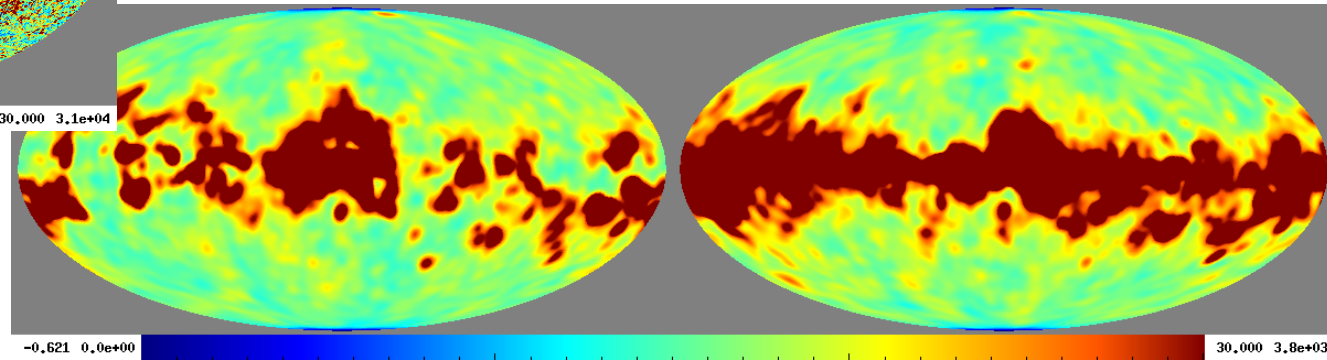
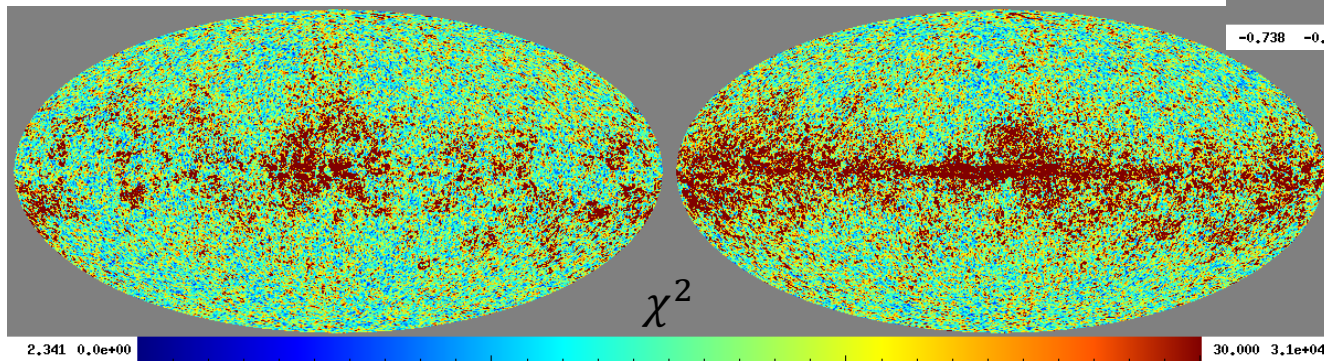
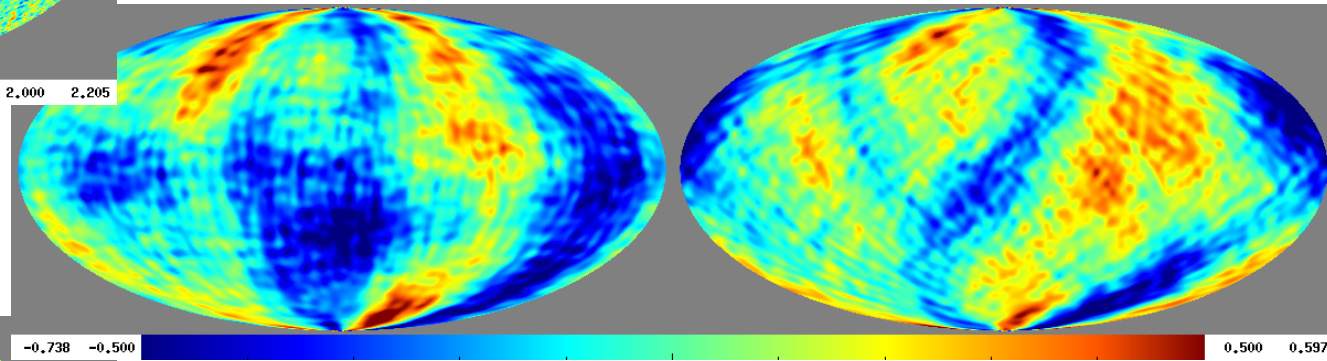
# Method

- Model 90.91 with both  $r = 0.003$  and  $r = 0$
- Maps smoothed to 60 arcmin and nside 256
- Optimized 6 parameters pr pixel using Commander1
  - CMB ( $A_{cmb}$ )
  - One dust model ( $A_{dust}, T_{dust}$  and  $\beta$ )
  - Synchrotron model ( $A_{sync}, \beta_{synch}$ )
- Resulting CMB map: masking the galaxy plane (mask covers 21% of the sky) and using Wiener filtering to fill inn the CMB
- Using anafast to create a power spectrum
- Blackwell Rao estimator to estimate r

# Foreground model 90.91 0003 ( $r = 0$ )

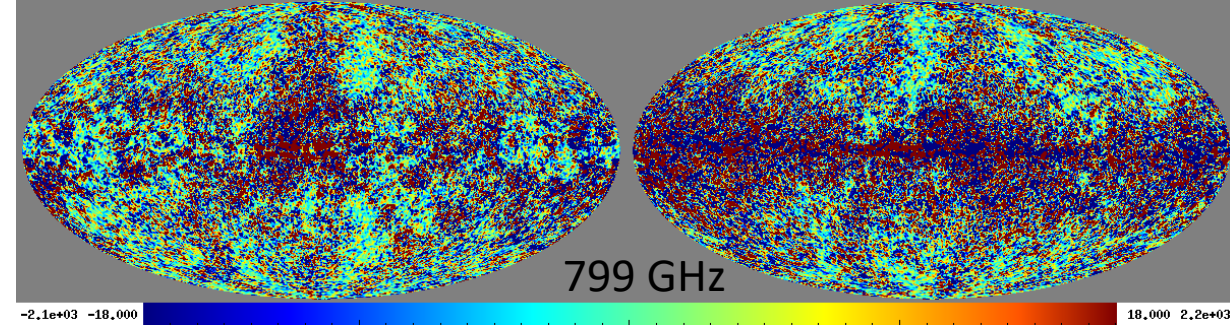
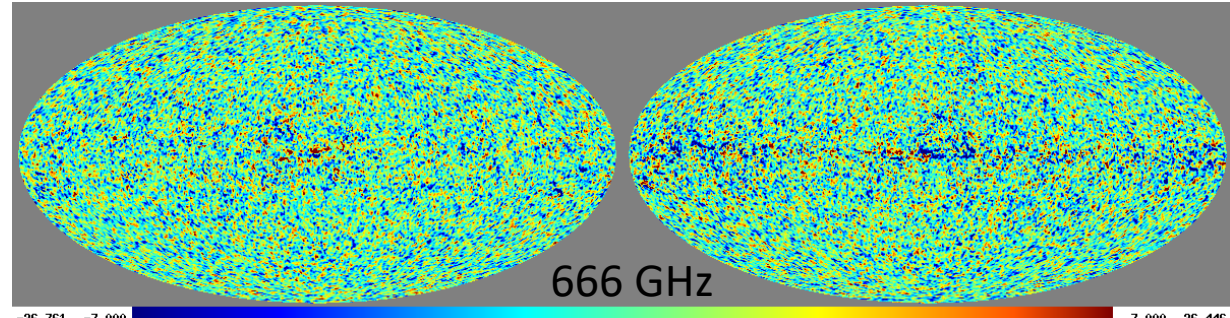
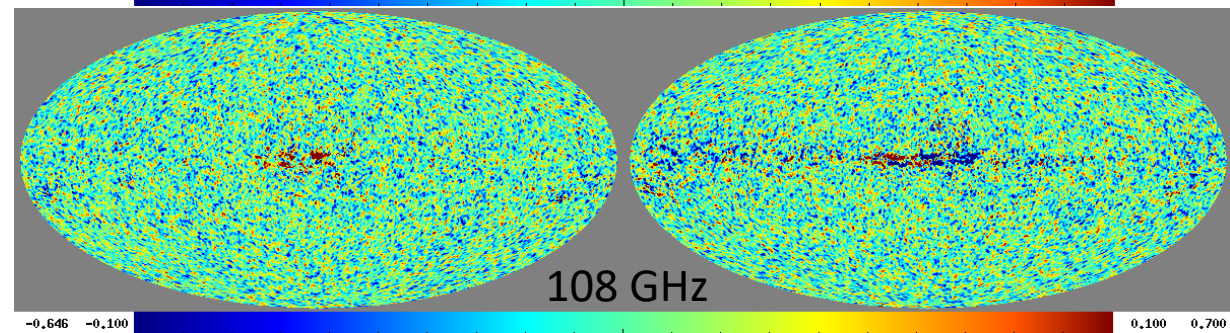
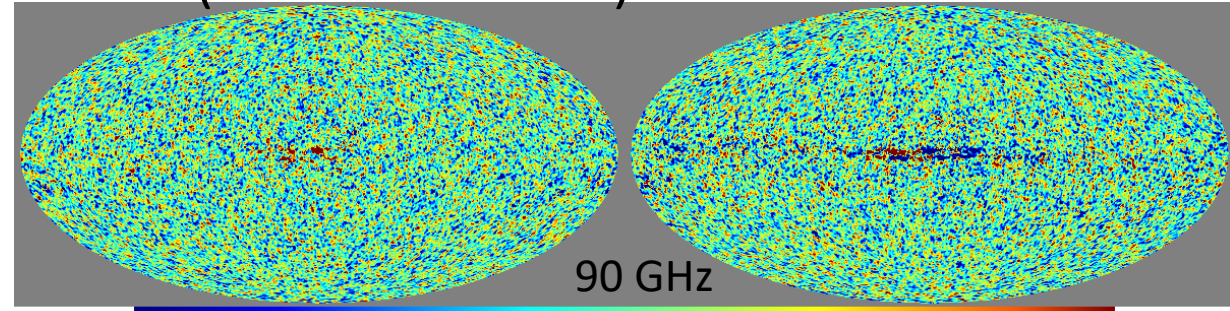
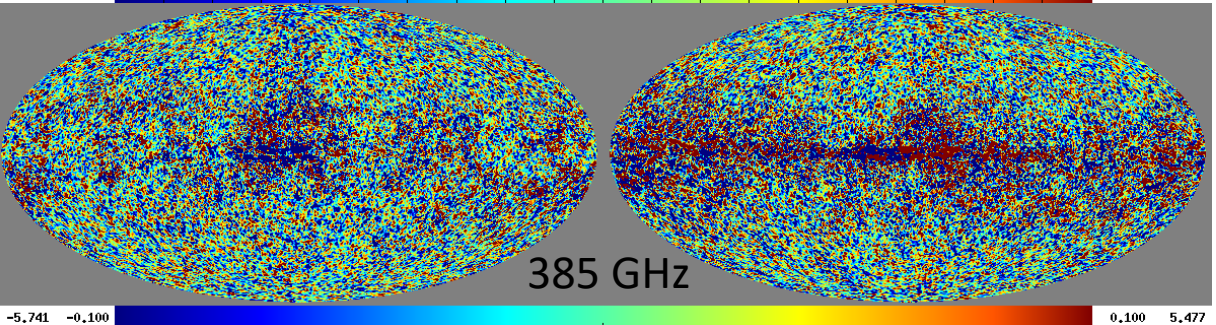
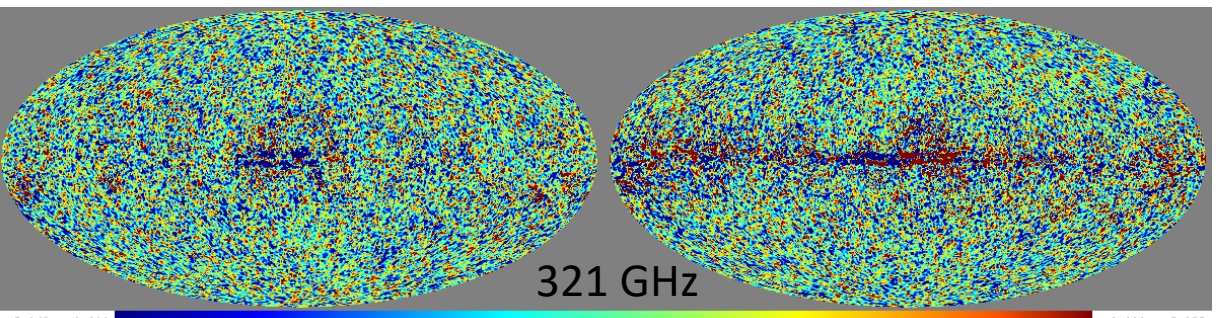
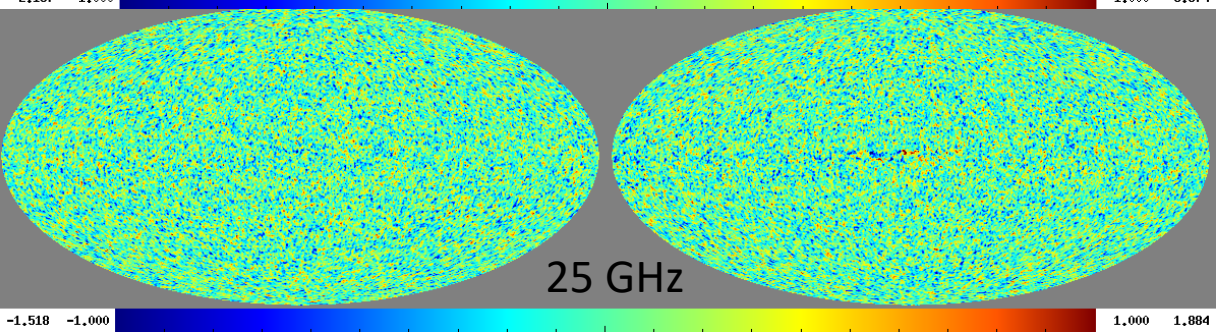
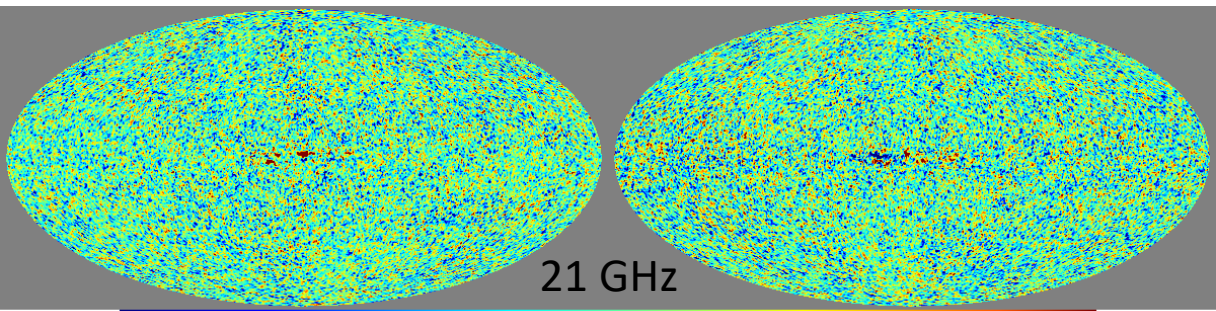


Smoothed to  $5^\circ$



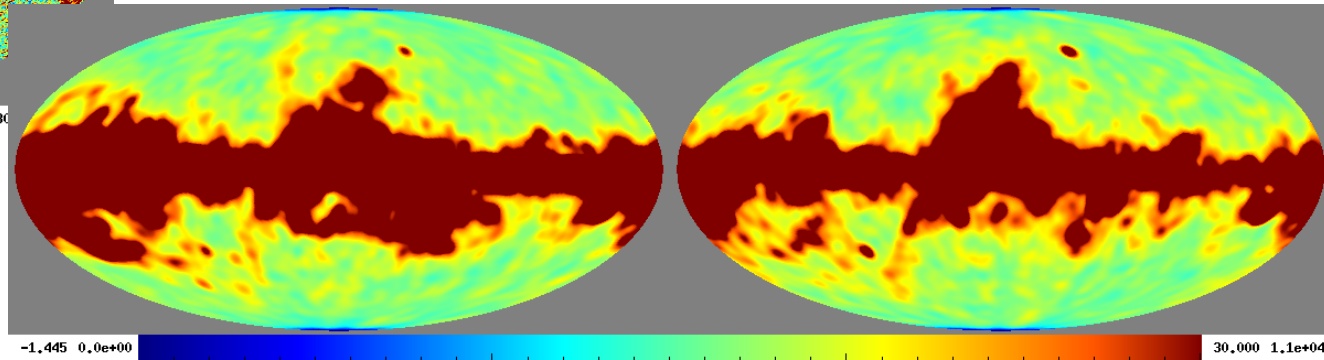
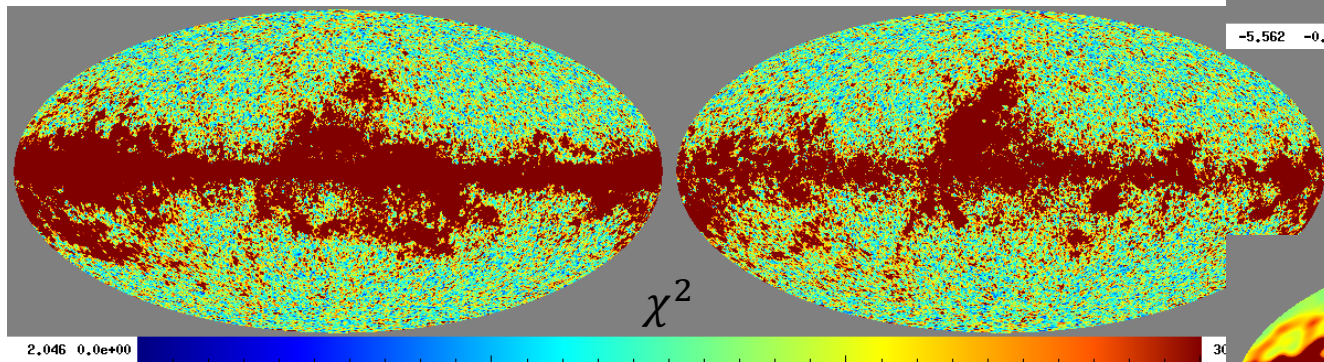
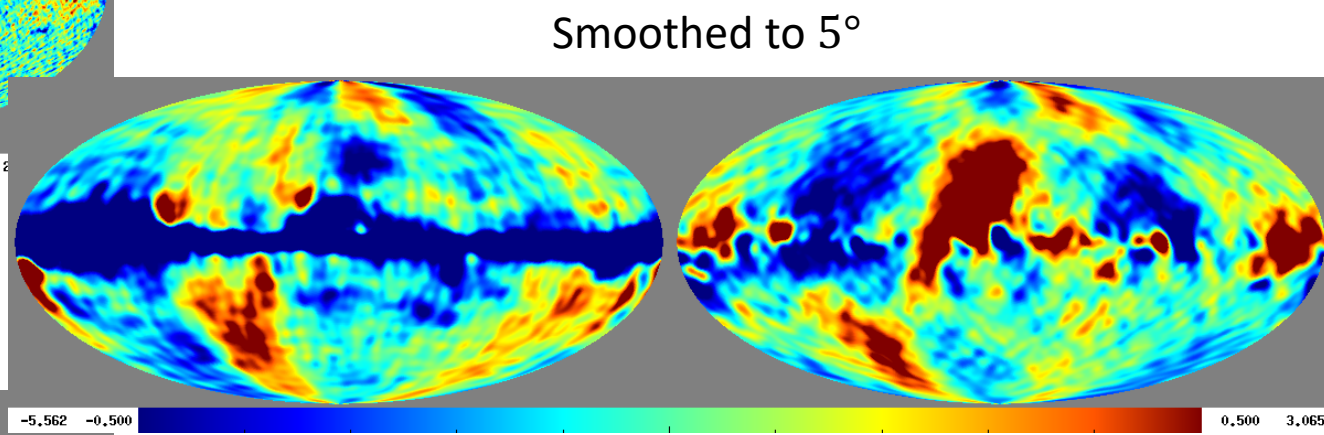
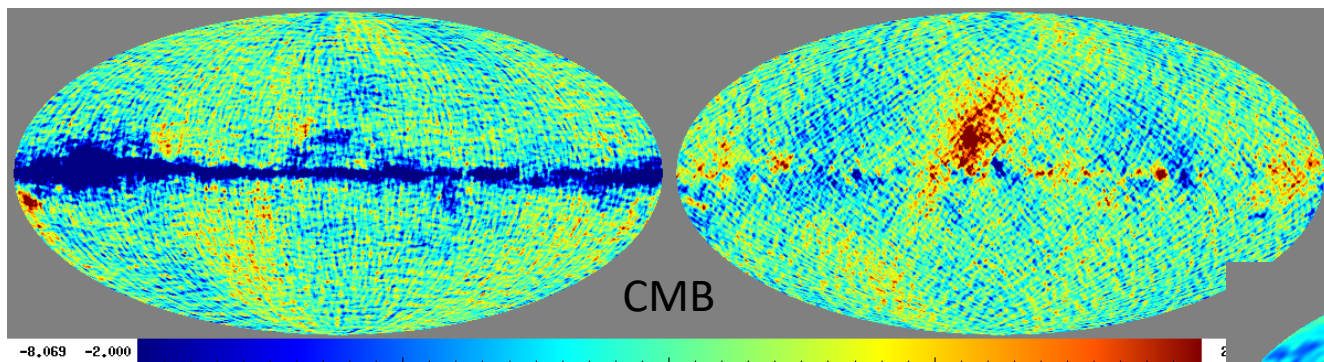
# AME and Synchrotron frequencies Model 90.91 Residuals (data-model)

# CMB frequencies



# Dust frequencies

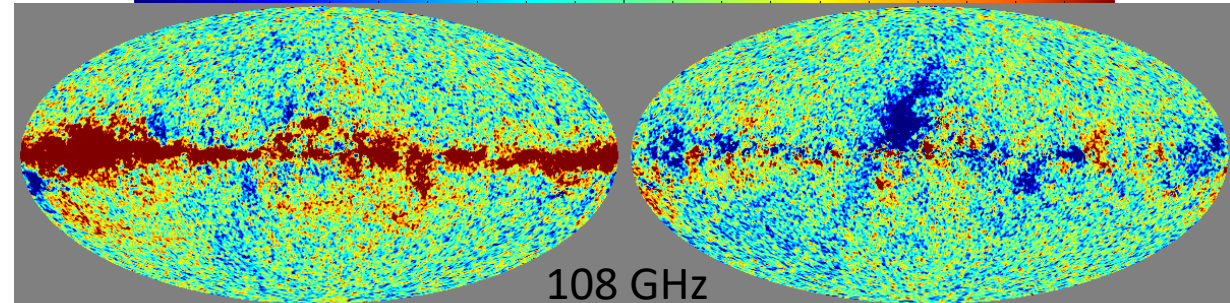
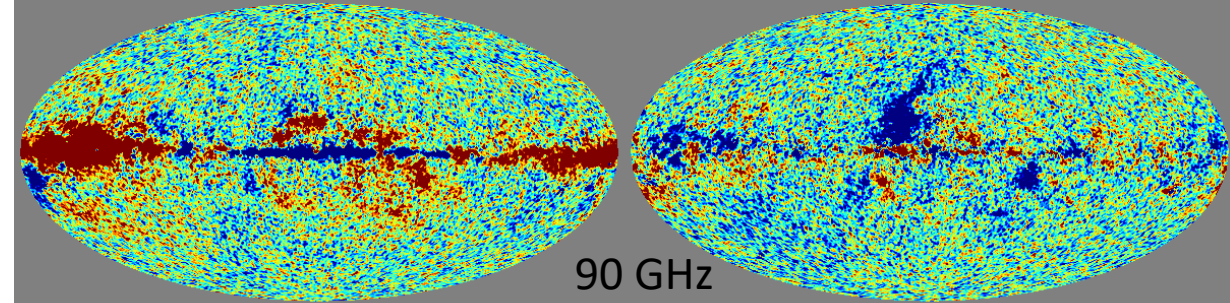
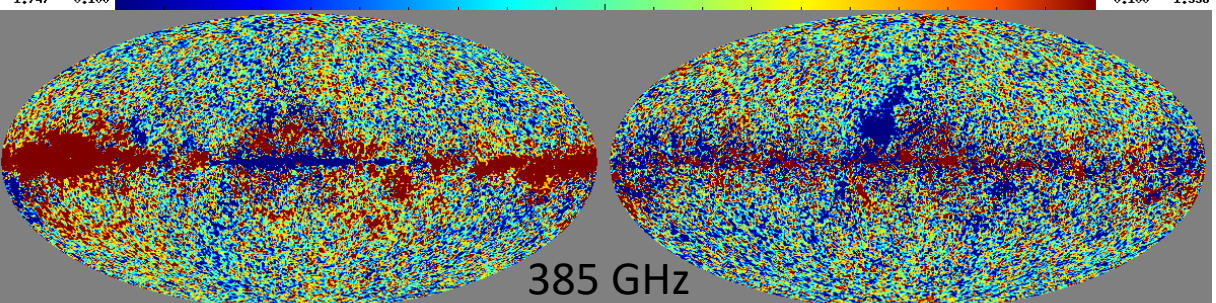
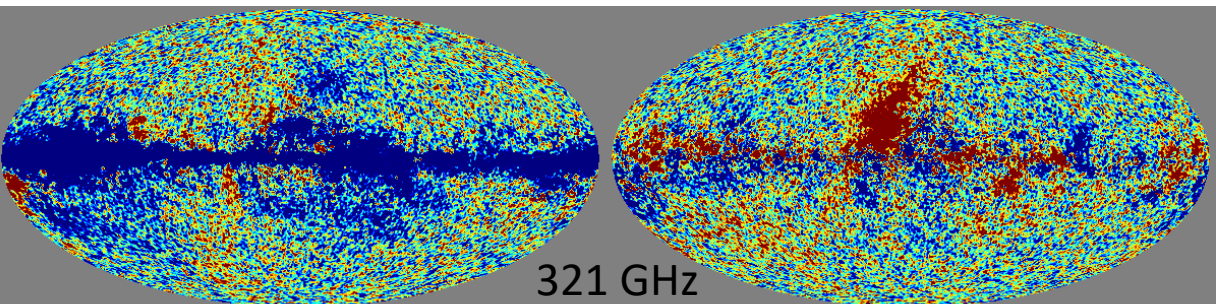
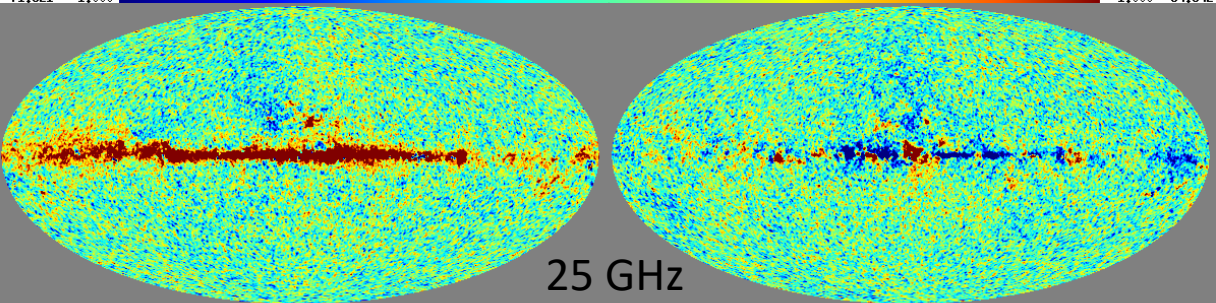
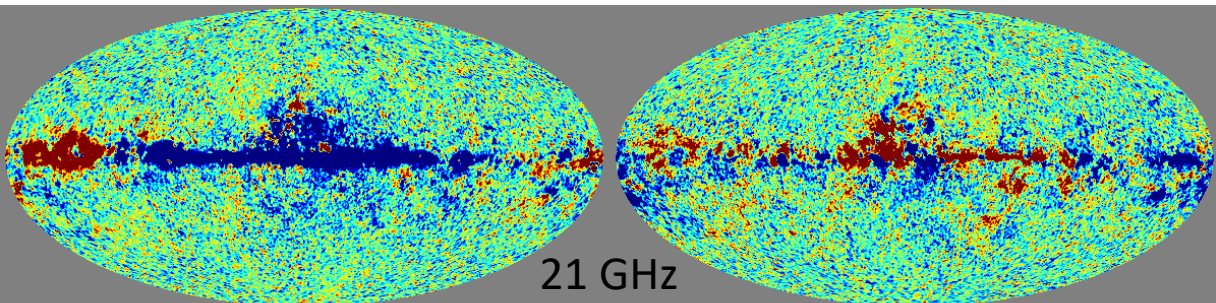
# Foreground model 90.92 with the same model as for 90.91



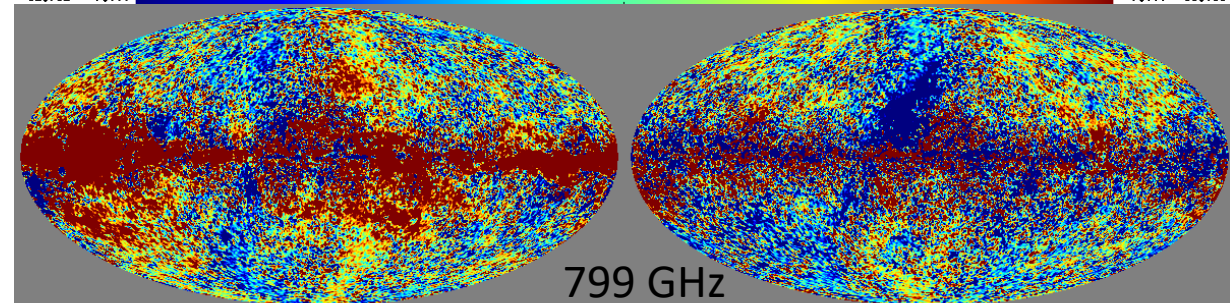
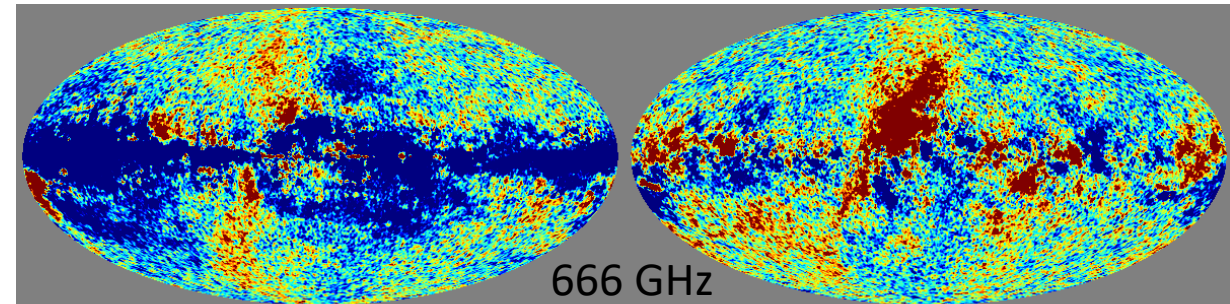
AME and Synchrotron frequencies

Model 90.92 Residuals (data-model)

CMB frequencies



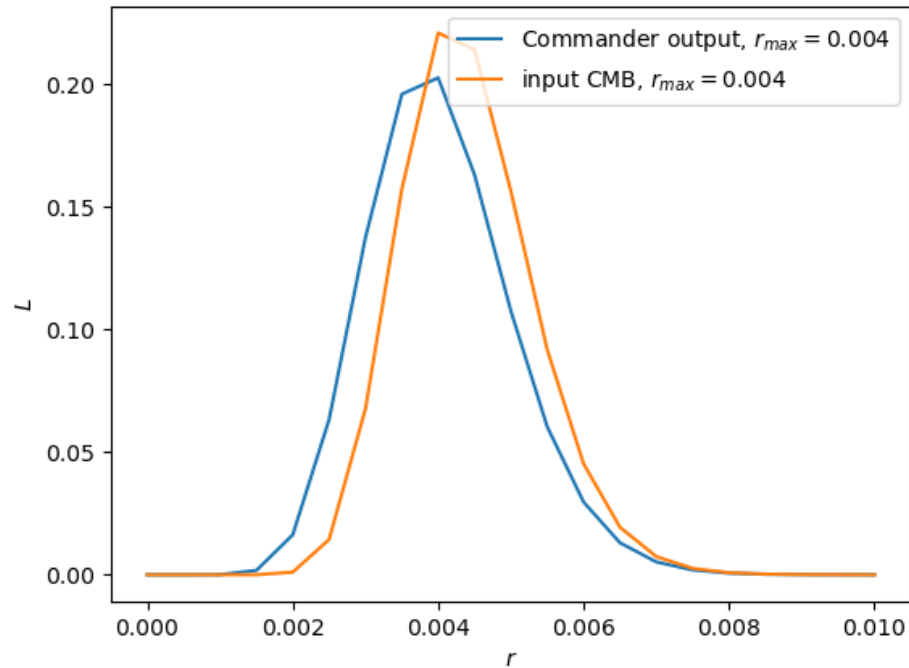
Dust frequencies



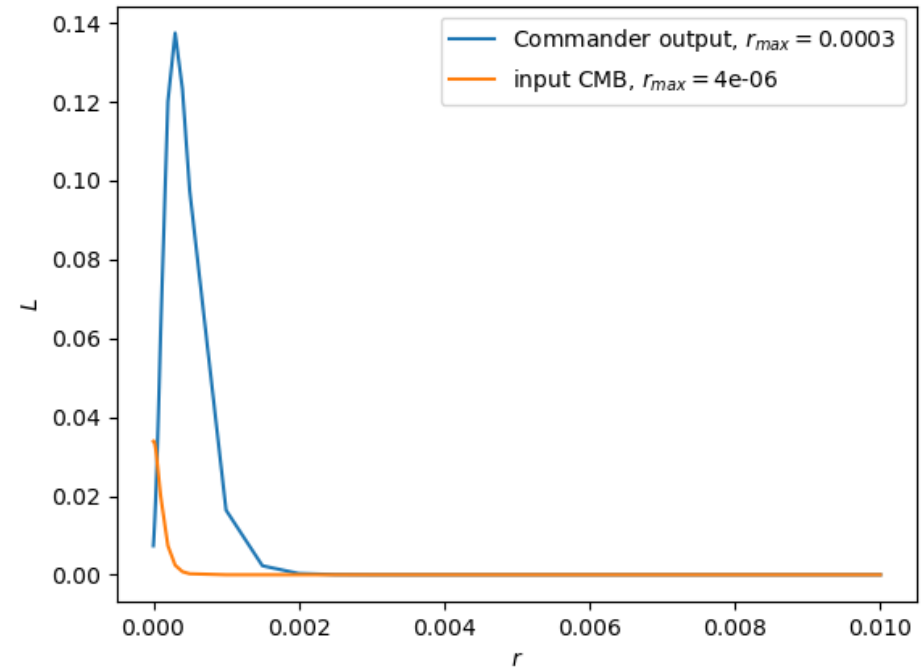
# Blackwell Rao estimator on 90.91 cmb maps

- very preliminary result
- including up to  $l = 12$

## Model 0000 (input $r = 0.003$ )



## Model 0001 (input $r = 0$ )



# Work in progress

- Finish analysis of the different realisations that have been run through Commander
- Fit for AME to run model 90.92
- Add uncertainty calculations to Blackwell Rao estimator
- Run Commander with limited frequency range