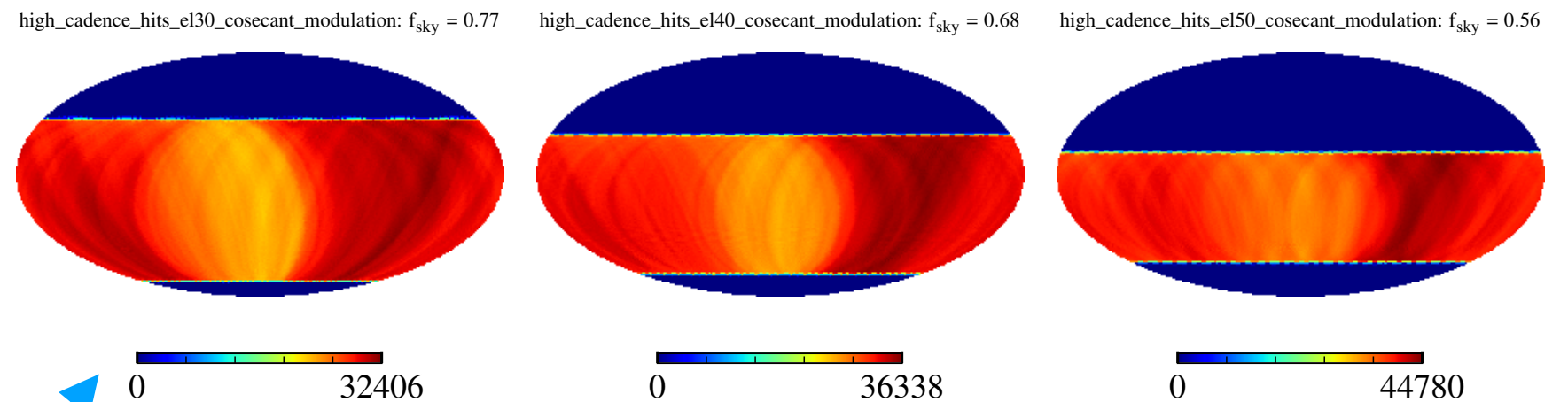


DRAFT tool update: Including galactic emission

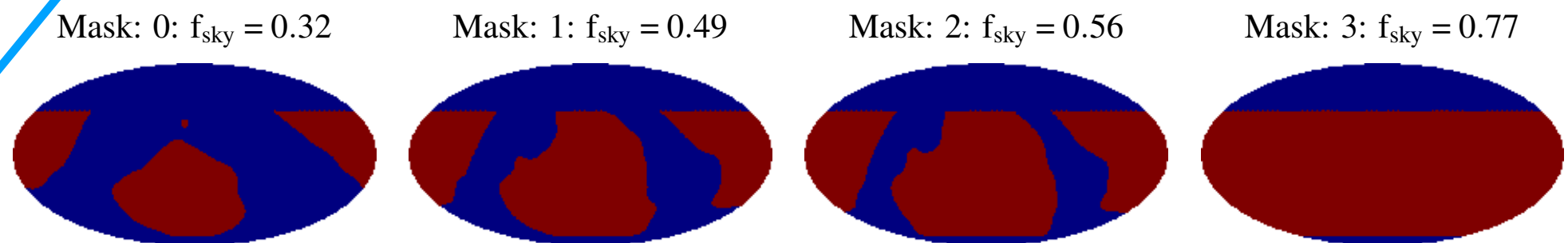
30 April, 2020

- Plan is to compute and store the covariances for galactic emission for some set of masks and footprints.
- *To be fixed:* currently using Planck galactic mask.

CMB-S4 footprints:
high cadence cos mod footprints



Masks:
(Modified) Planck galaxy
mask



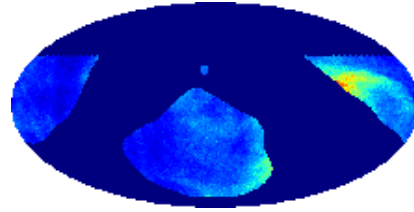
Covariance for galactic emission: 12 set of covariances: 3 footprints * 4 masks

To be fixed: Currently just tried the first footprint ($f_{\text{sky}} = 0.77$)

93 GHz

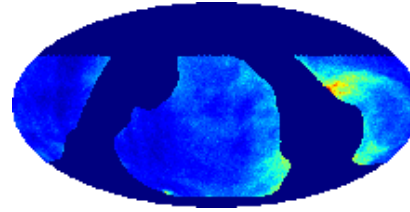
Synchrotron

sync @ 145 GHz + Mask 0: $f_{\text{sky}} = 0.32$



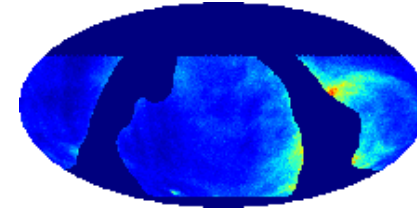
0 μK 3.69117

sync @ 145 GHz + Mask 1: $f_{\text{sky}} = 0.49$



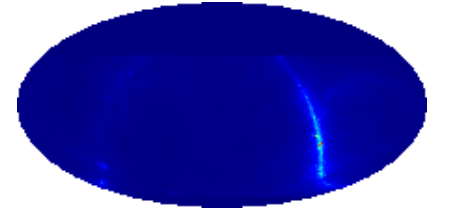
0 μK 4.48737

sync @ 145 GHz + Mask 2: $f_{\text{sky}} = 0.56$



0 μK 5.36002

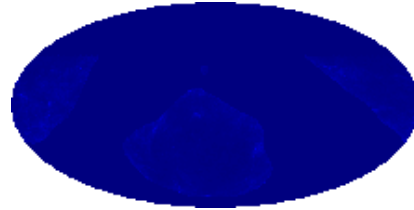
sync @ 145 GHz + Mask 3: $f_{\text{sky}} = 0.77$



0 μK 83.2415

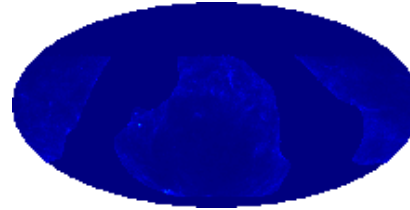
Dust

dust @ 145 GHz + Mask 0: $f_{\text{sky}} = 0.32$



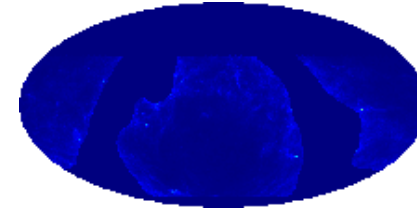
0 μK 400

dust @ 145 GHz + Mask 1: $f_{\text{sky}} = 0.49$



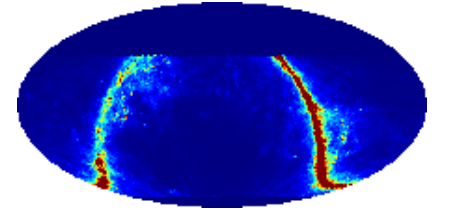
0 μK 400

dust @ 145 GHz + Mask 2: $f_{\text{sky}} = 0.56$



0 μK 400

dust @ 145 GHz + Mask 3: $f_{\text{sky}} = 0.77$

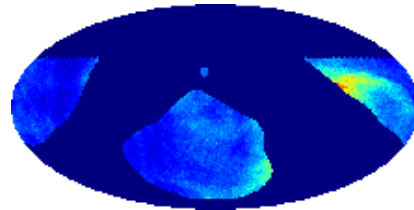


0 μK 400

145 GHz

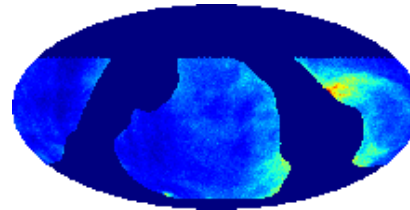
Synchrotron

sync @ 145 GHz + Mask 0: $f_{\text{sky}} = 0.32$



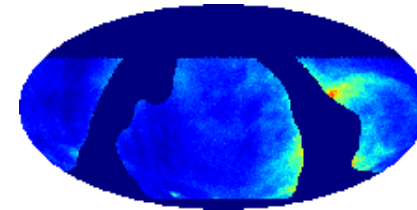
0 μK 1.26268

sync @ 145 GHz + Mask 1: $f_{\text{sky}} = 0.49$



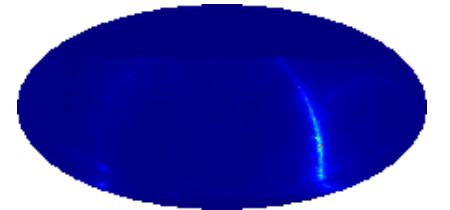
0 μK 1.53158

sync @ 145 GHz + Mask 2: $f_{\text{sky}} = 0.56$



0 μK 1.83447

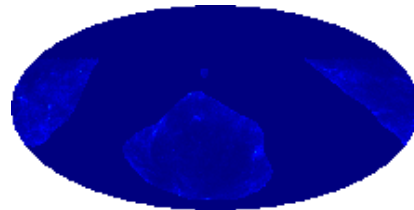
sync @ 145 GHz + Mask 3: $f_{\text{sky}} = 0.77$



0 μK 28.7121

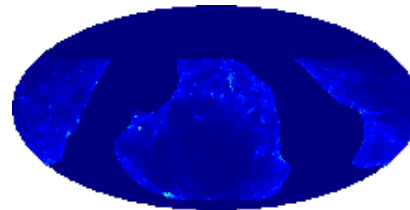
Dust

dust @ 145 GHz + Mask 0: $f_{\text{sky}} = 0.32$



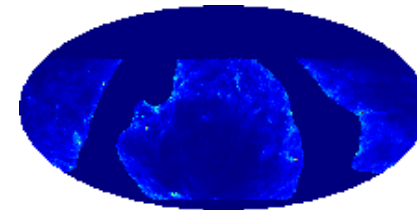
0 μK 400

dust @ 145 GHz + Mask 1: $f_{\text{sky}} = 0.49$



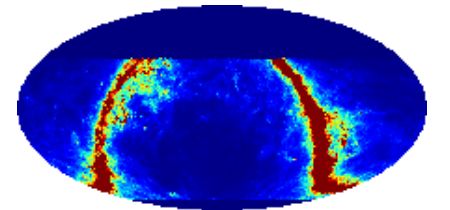
0 μK 400

dust @ 145 GHz + Mask 2: $f_{\text{sky}} = 0.56$



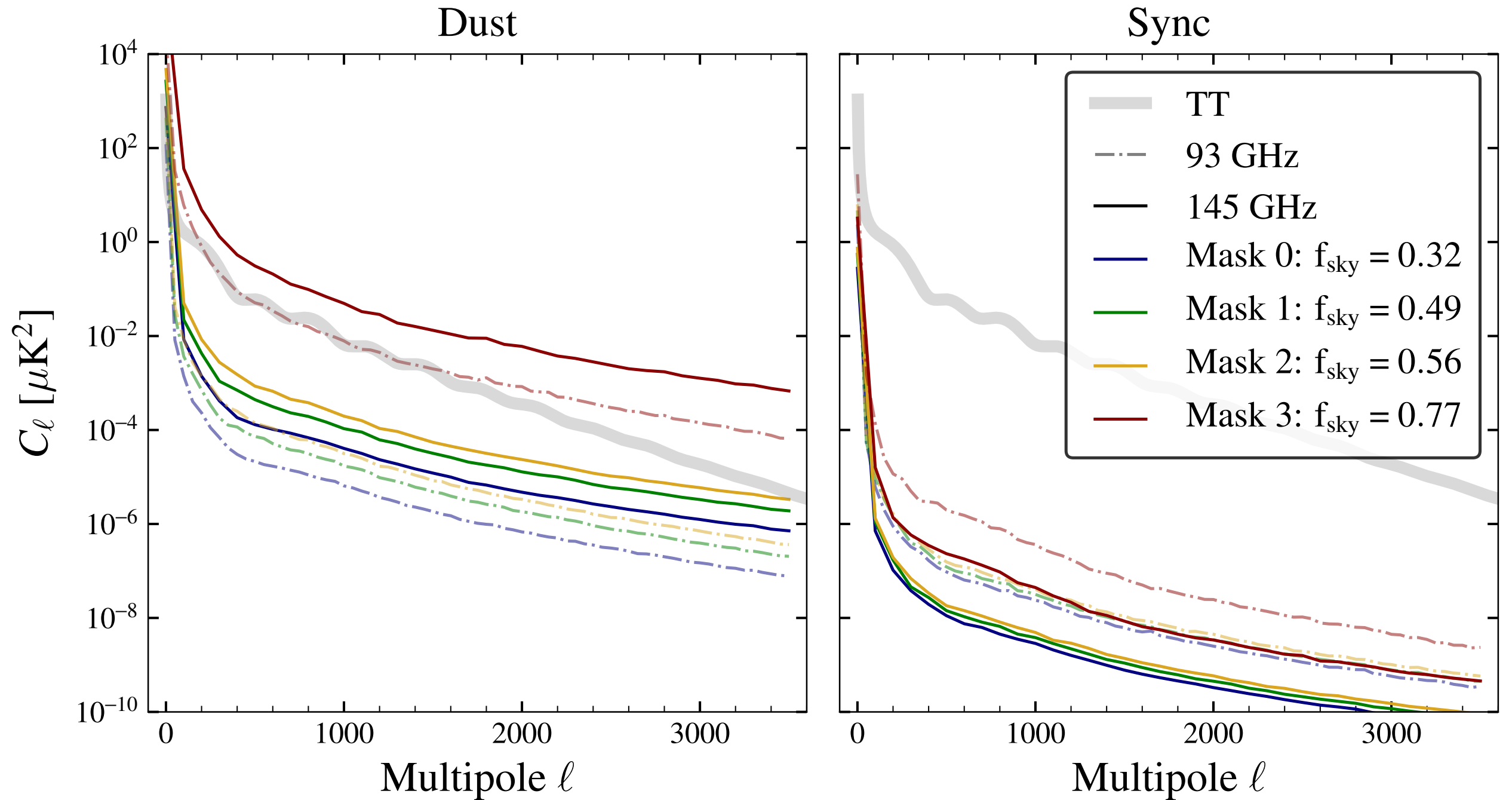
0 μK 400

dust @ 145 GHz + Mask 3: $f_{\text{sky}} = 0.77$



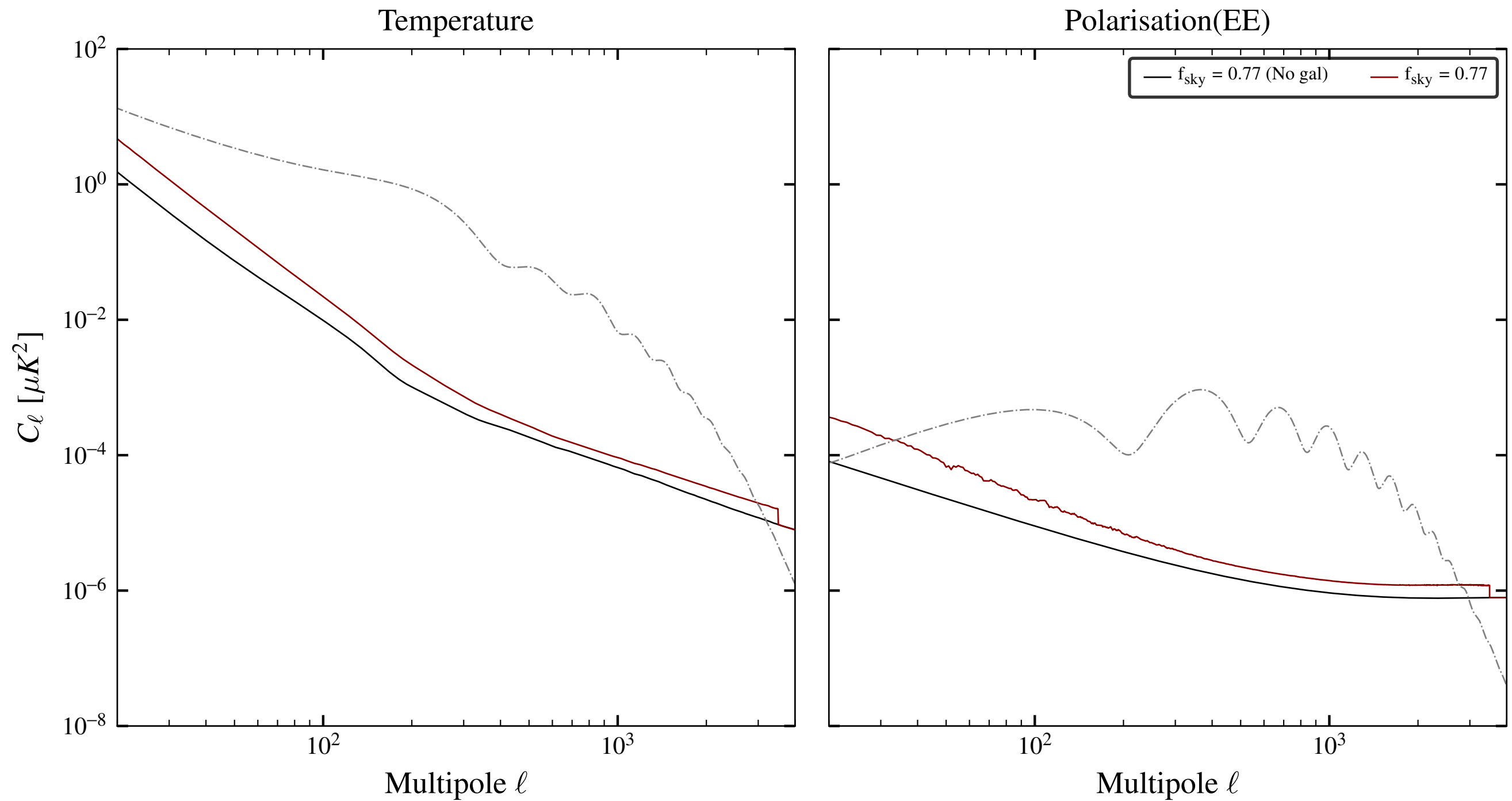
0 μK 400

Dust / Sync TT power spectra



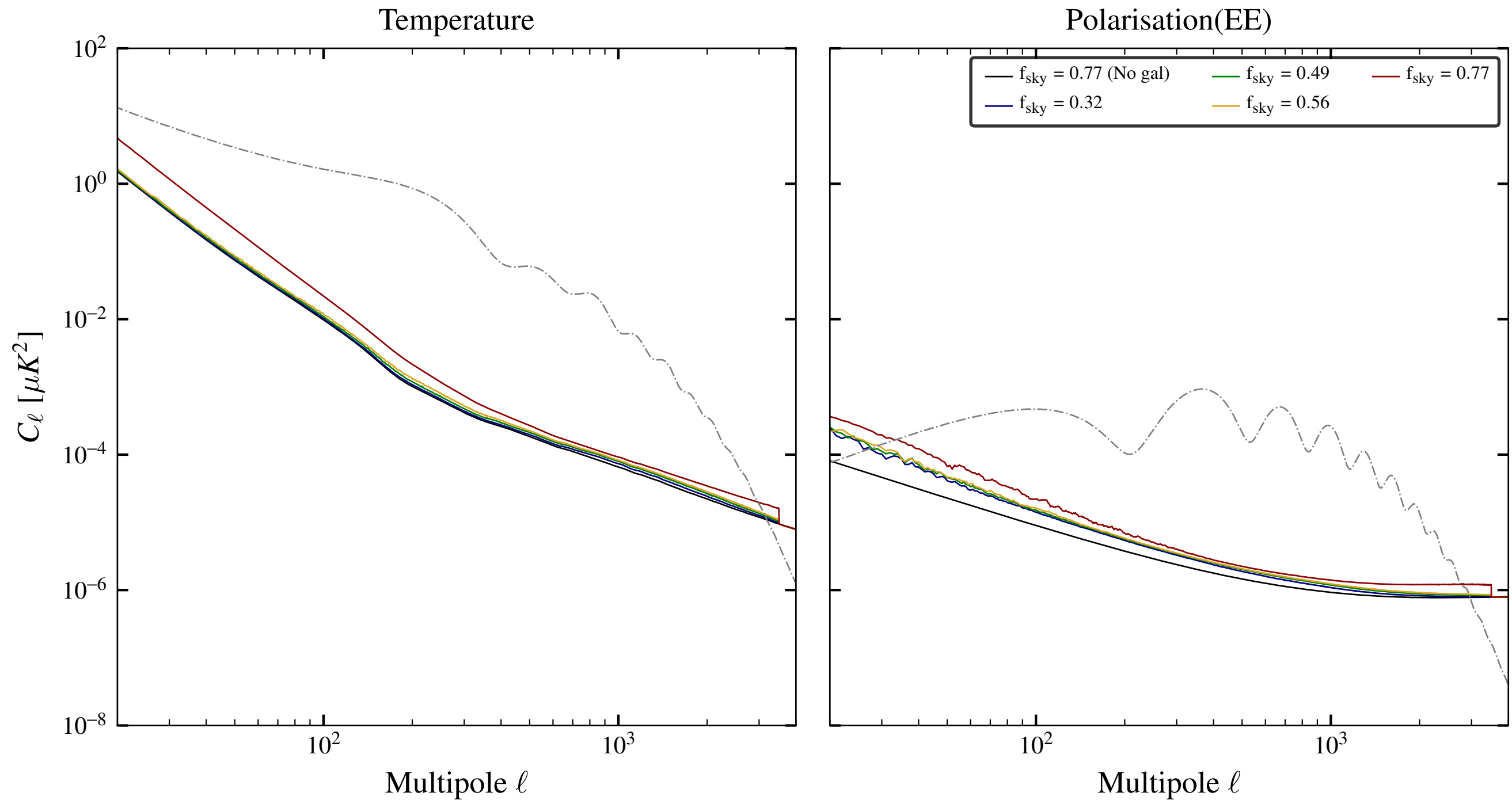
ILC curves - W/o vs w/ galaxy (4 bands)

without_vs_with_galaxy_mask3_93-145-225-278



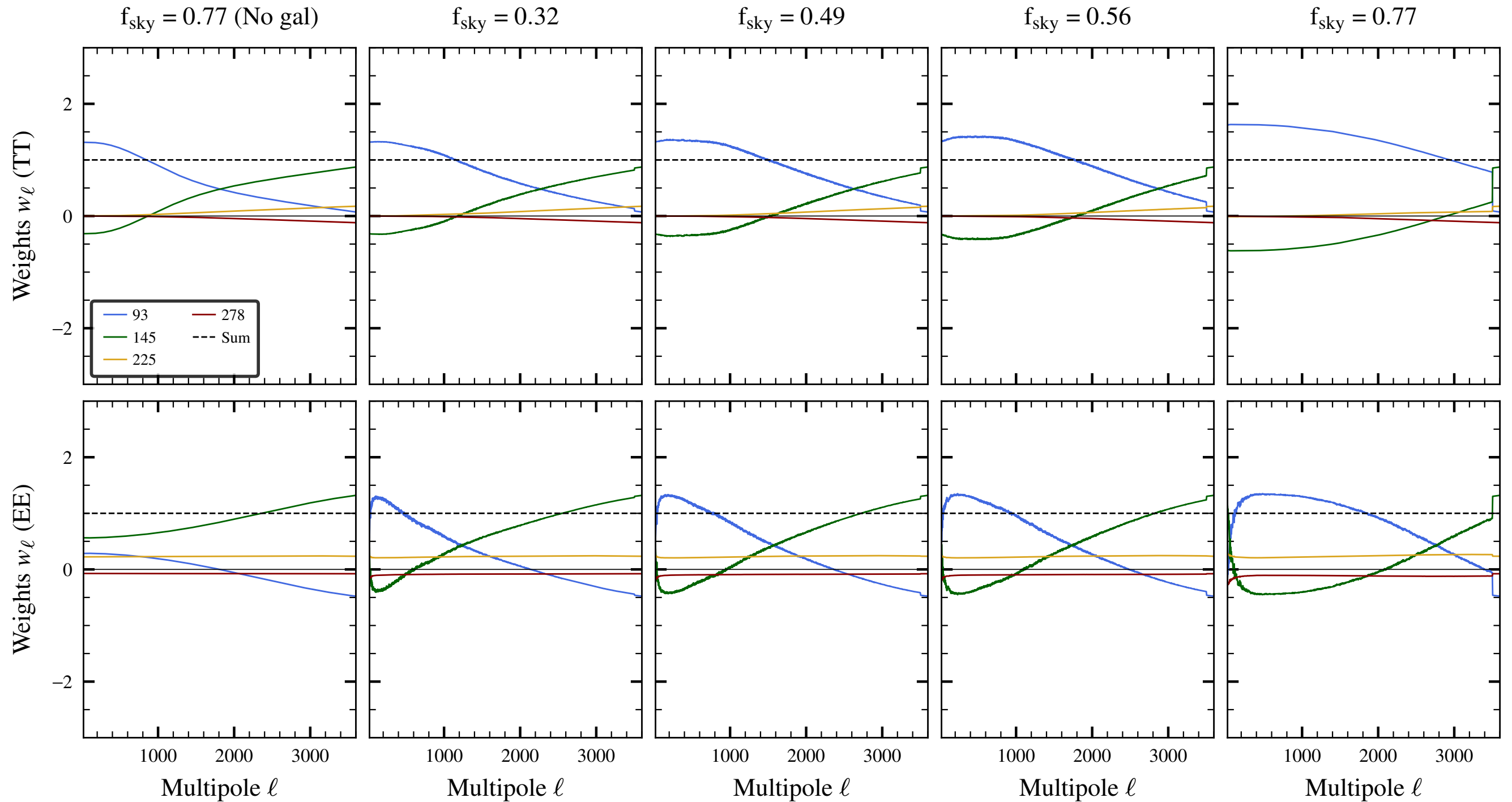
ILC curves - W/o vs w/ galaxy (4 bands, 4 masks)

without_vs_with_galaxy_allmasks_93-145-225-278



Weights (4 bands, 4 masks)

without_vs_with_galaxy_allmasks_93-145-225-278



Eliminating bands, removing $1/f$, ...

