

Needlet analysis of PICO simulations

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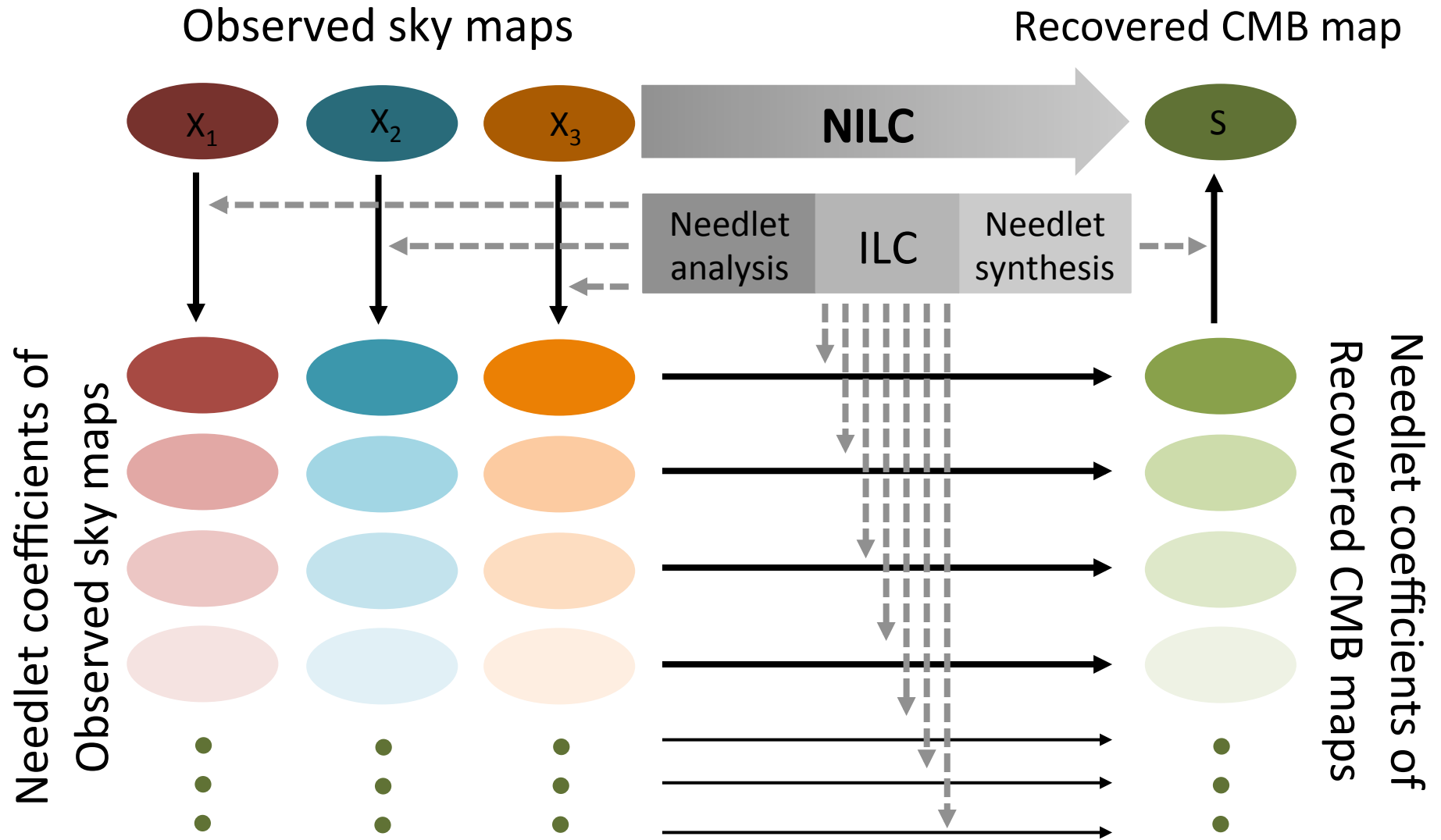
Needlet ILC

Internal Linear Combination (or ILC in short) estimates the CMB as linear combination of input simulated maps such that the variance of the estimate is minimum with unit response to unity.

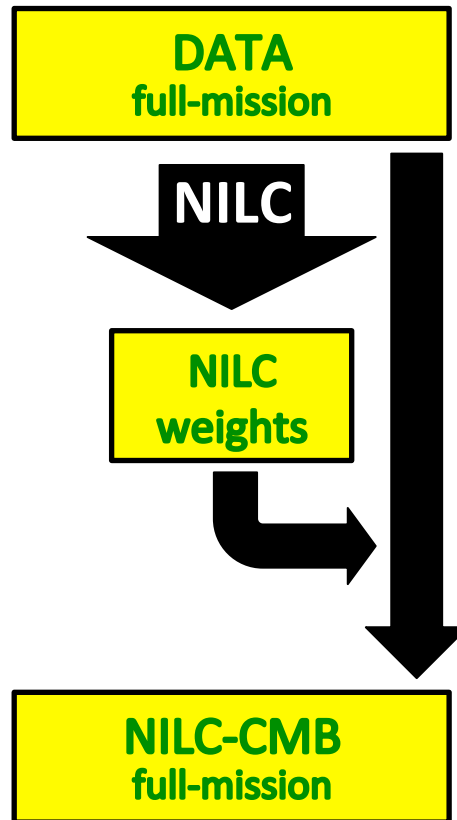
Needlets (Spherical wavelets) allow localized filtering both over pixel domain and harmonic domain.

Planck 2015 results IX and
the references therein

Needlet ILC

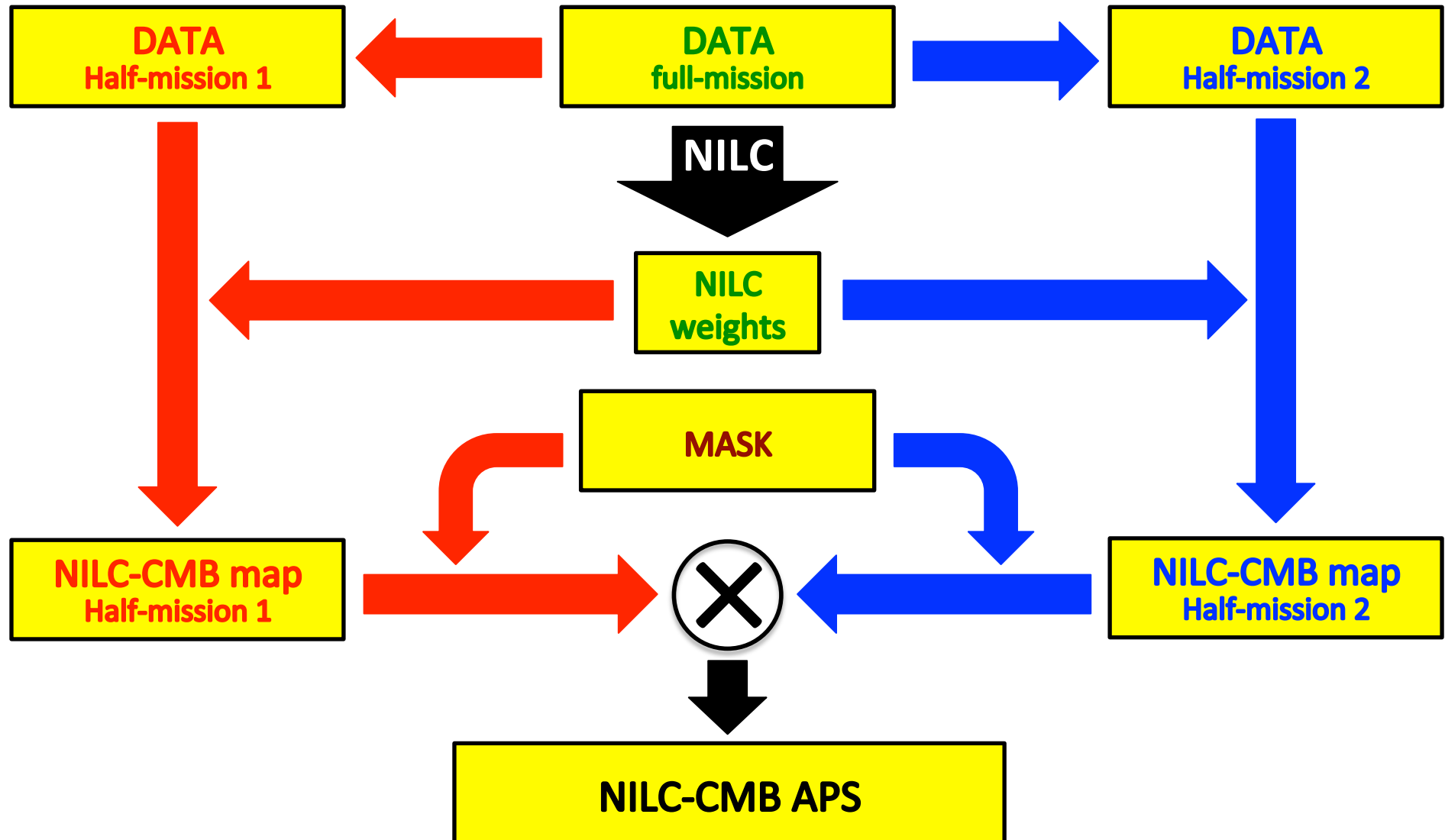


Estimation of CMB map

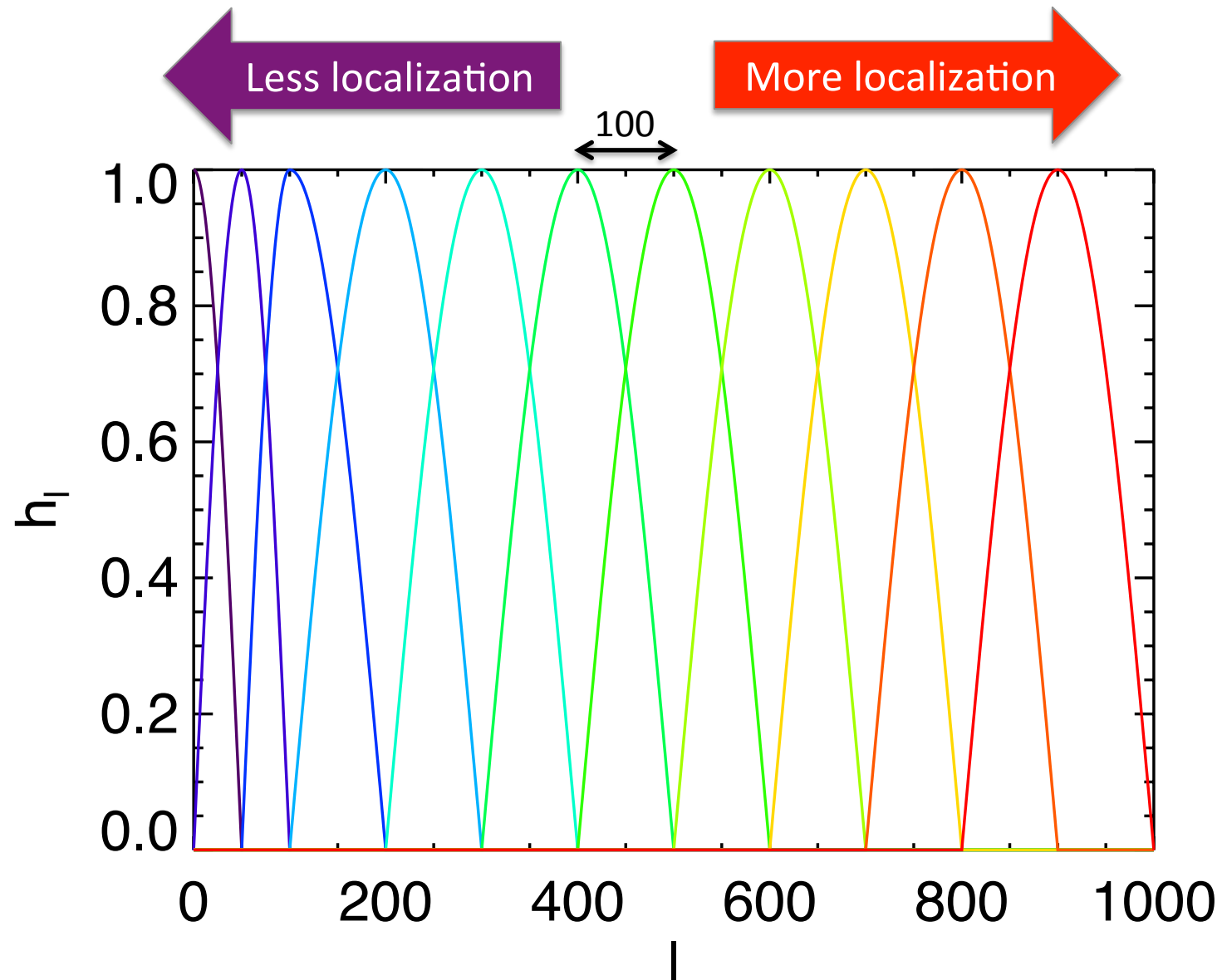


NILC-CMB map contains residuals of foregrounds and noise superimposed on true CMB

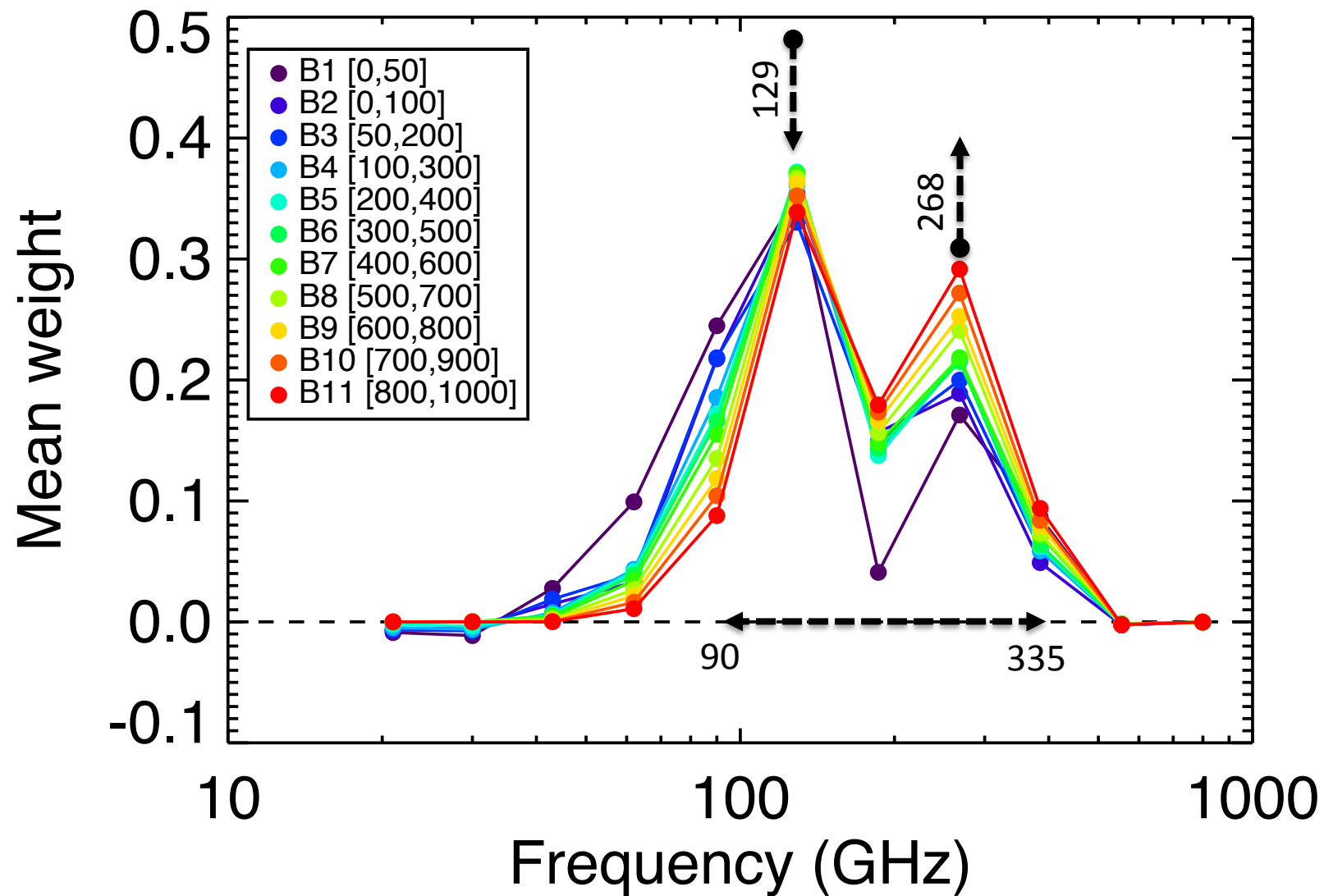
Estimation of CMB spectrum



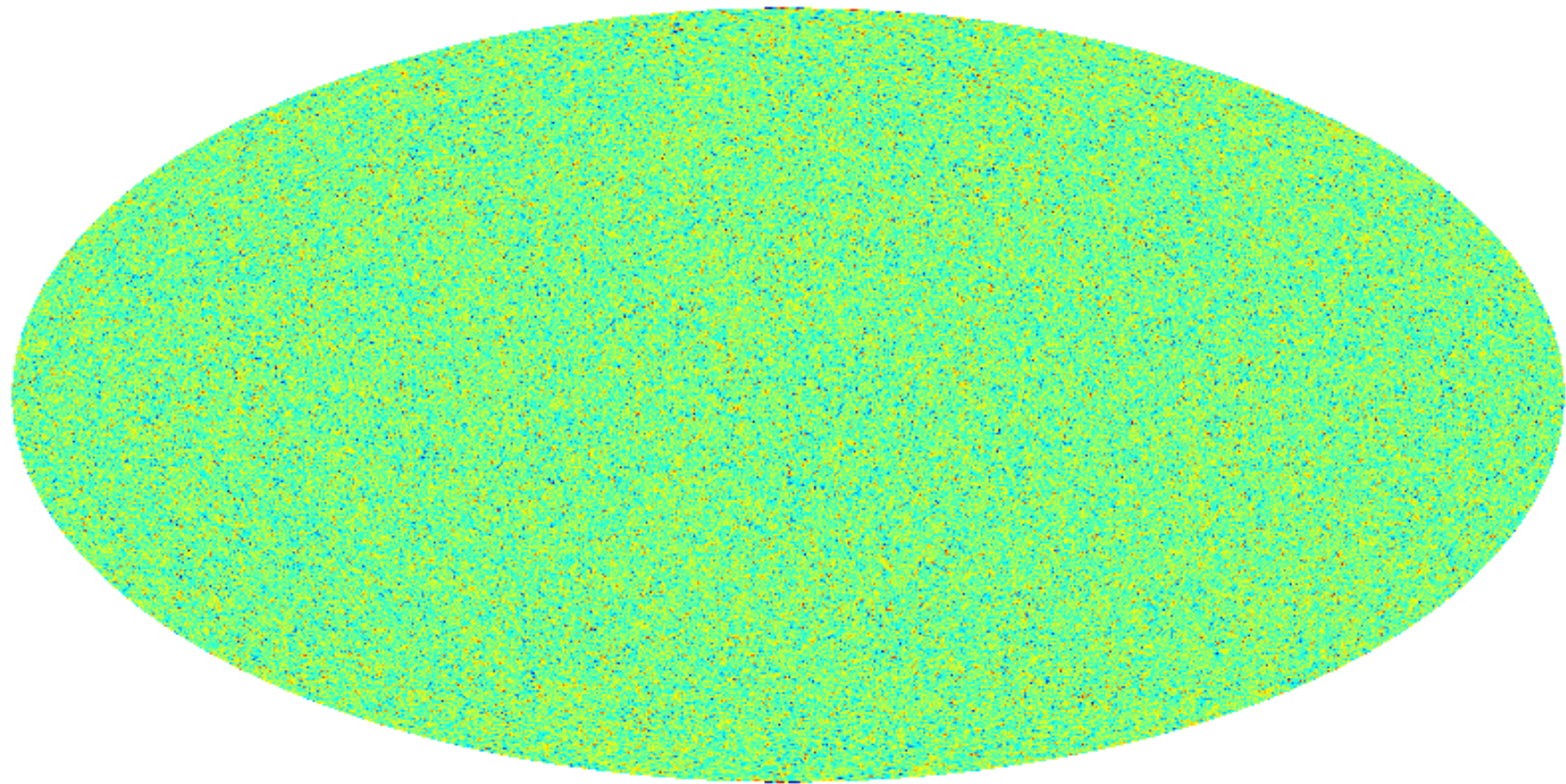
NEEDLET BANDS



NILC WEIGHTS



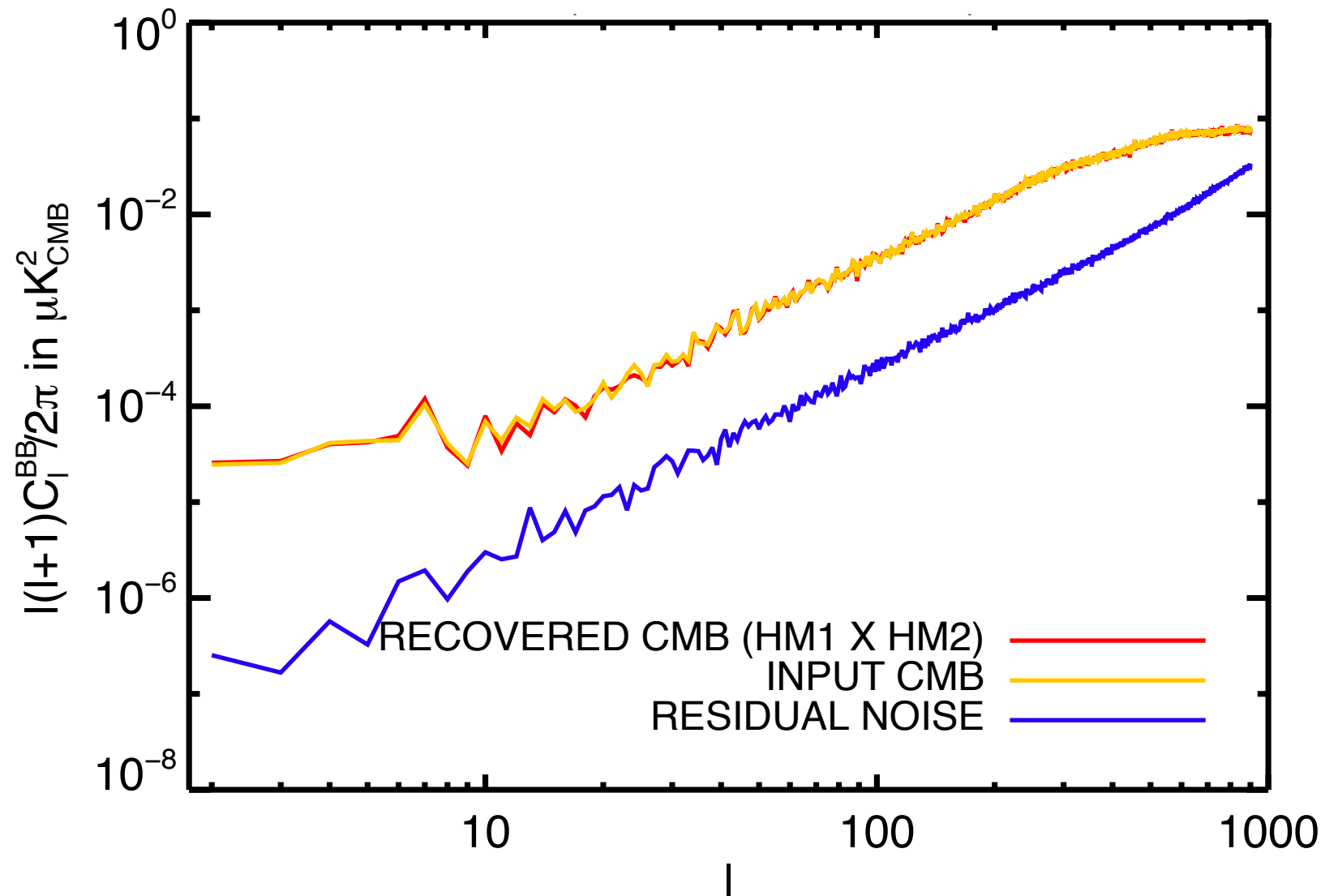
NILC-CMB MAP [B-mode]



-1.0  1.0 μK_{CMB}

Simulation: 90:00 Nside: 512 FWHM: 15 arcmin

NILC-CMB APS



Thank you