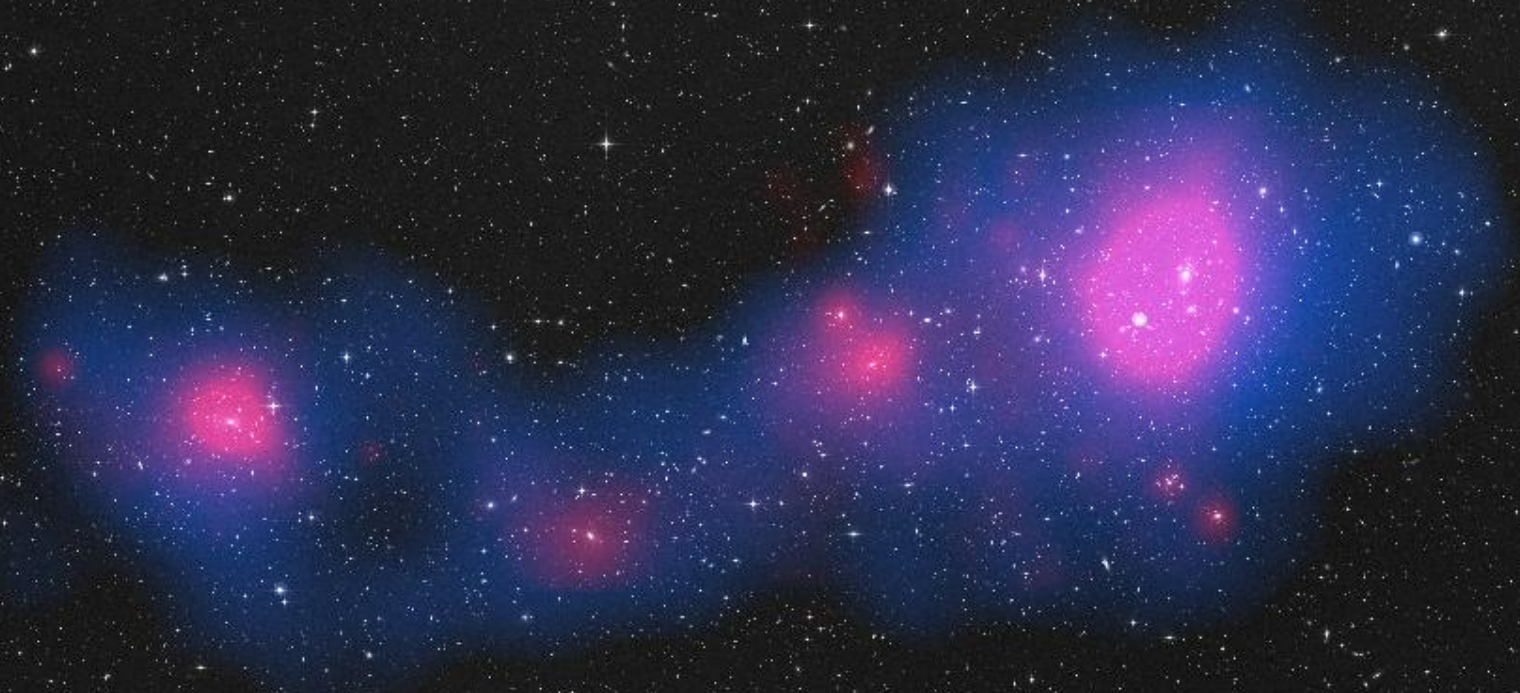
CIB – Weak Lensing cross-correlation



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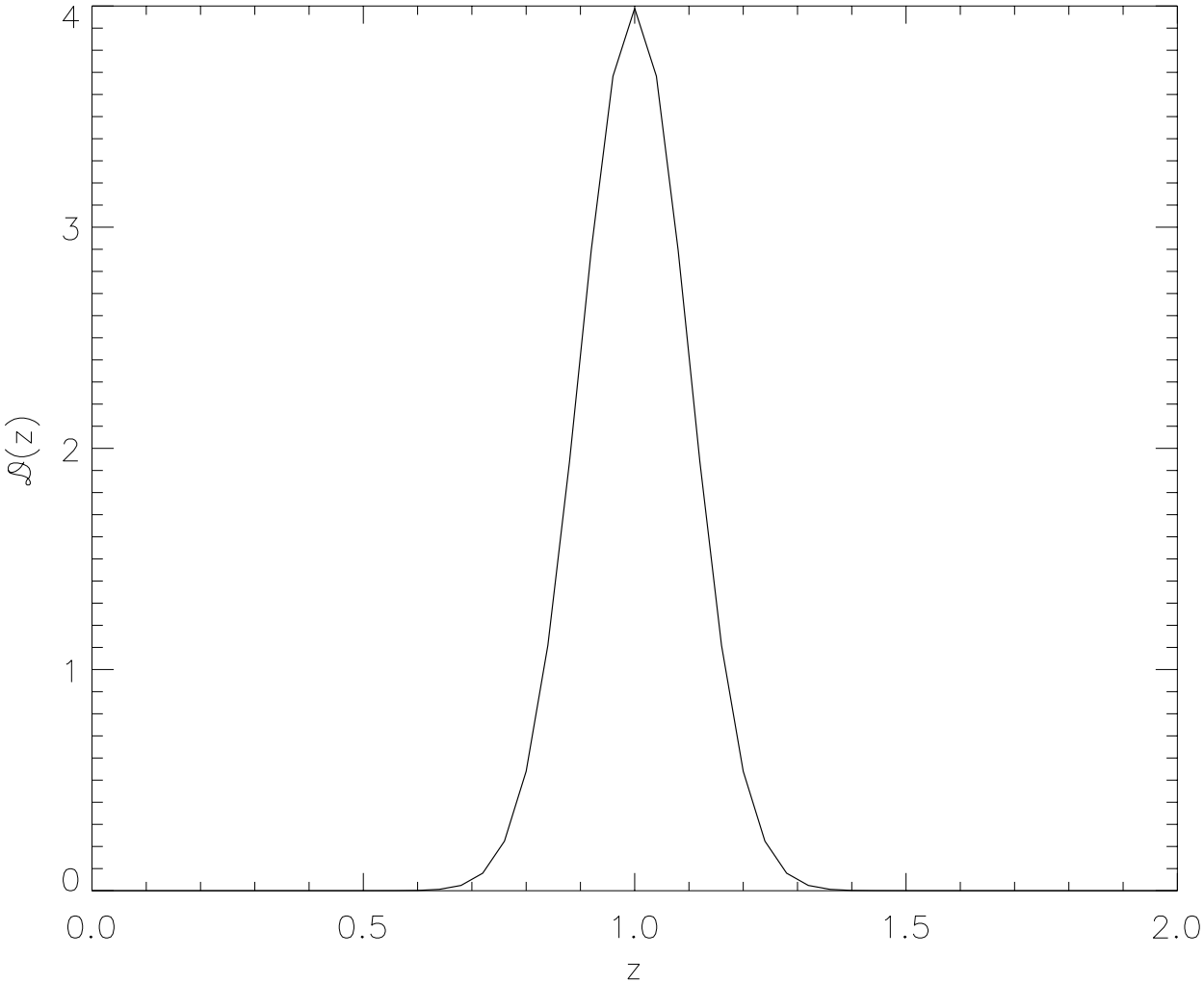
Formalism

Identical to CMB-Lensing x CIB formalism (see e.g., Hurier 2015),
with an integral over the lensed-plane,
weighted by the galaxy number density of the considered sample.

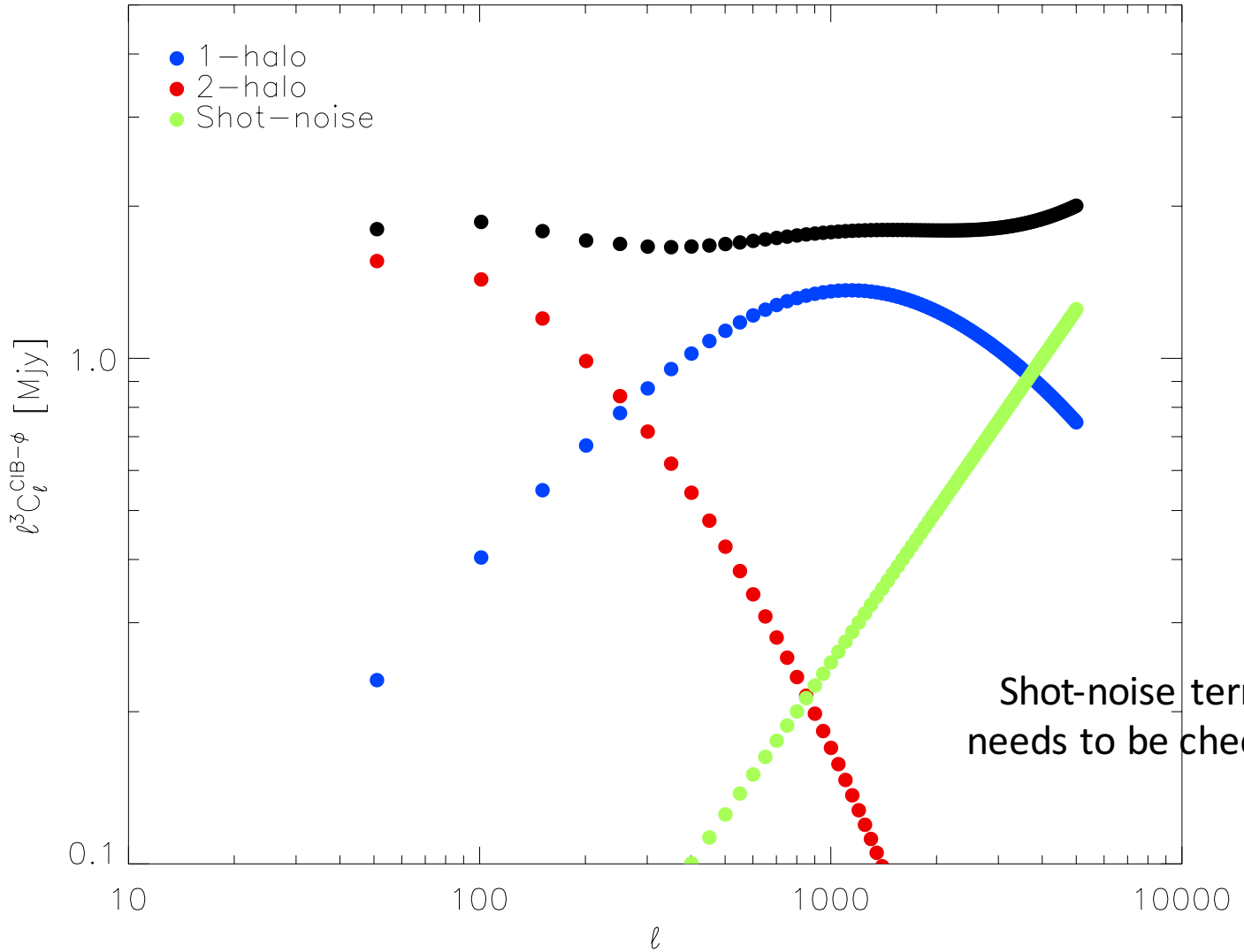
$$C_\ell^{\phi_g-\mathrm{CIB}} = \frac{1}{N_g}\int \frac{\mathrm{d}N}{\mathrm{d}z} C_\ell^{\phi_g(z)-\mathrm{CIB}}\mathrm{d}z$$

Needed ingredient:
→ Matter power spectrum
→ Halo mass function
→ CIB luminosity function

Exemple: dN/dz

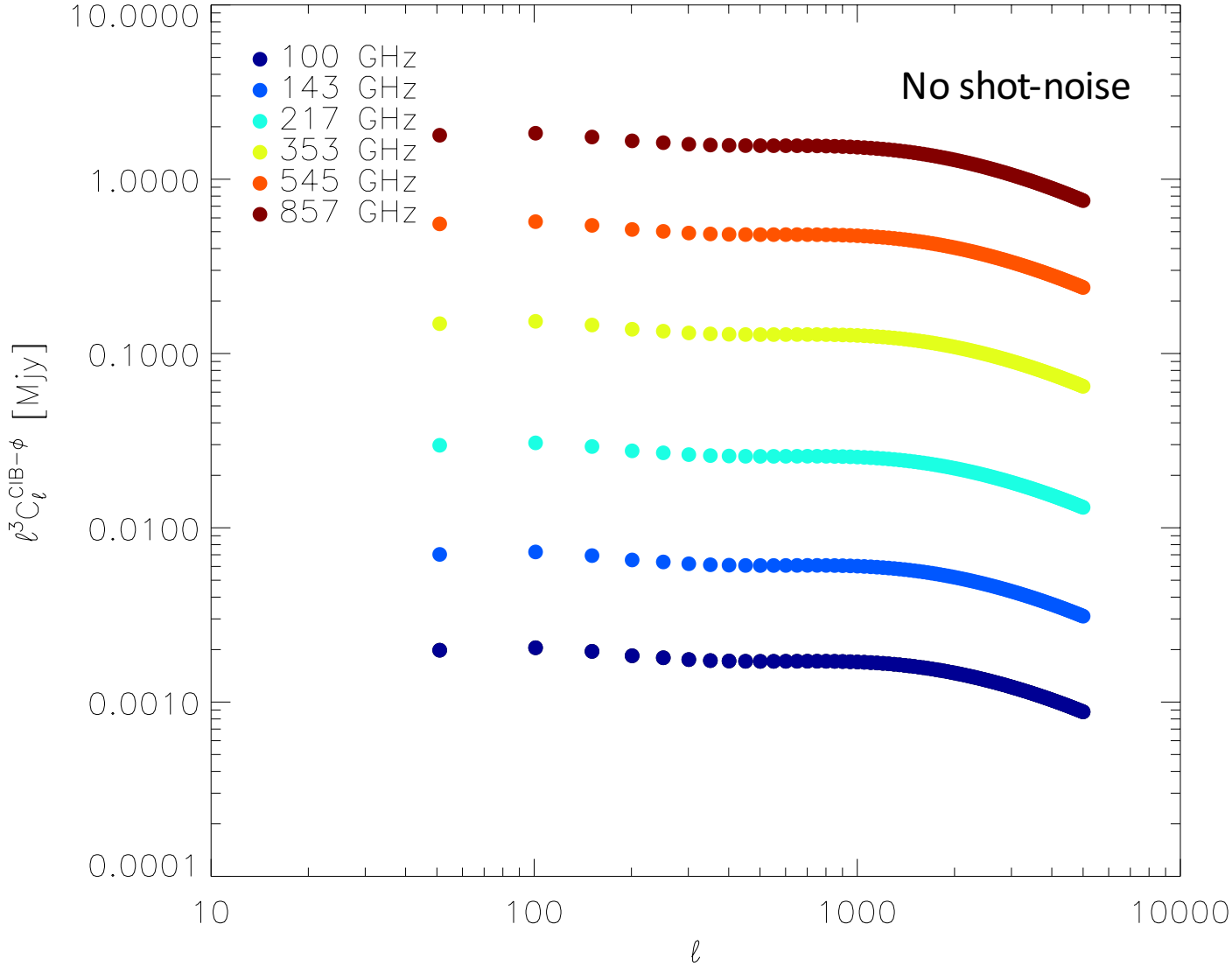


Exemple: Angular power spectrum



Shot-noise term needs to be checked

Exemple: variation with frequency



Summary

Galaxy weak-lensing x CIB modelling based on:

→ Halo model

→ Dark-matter power spectrum

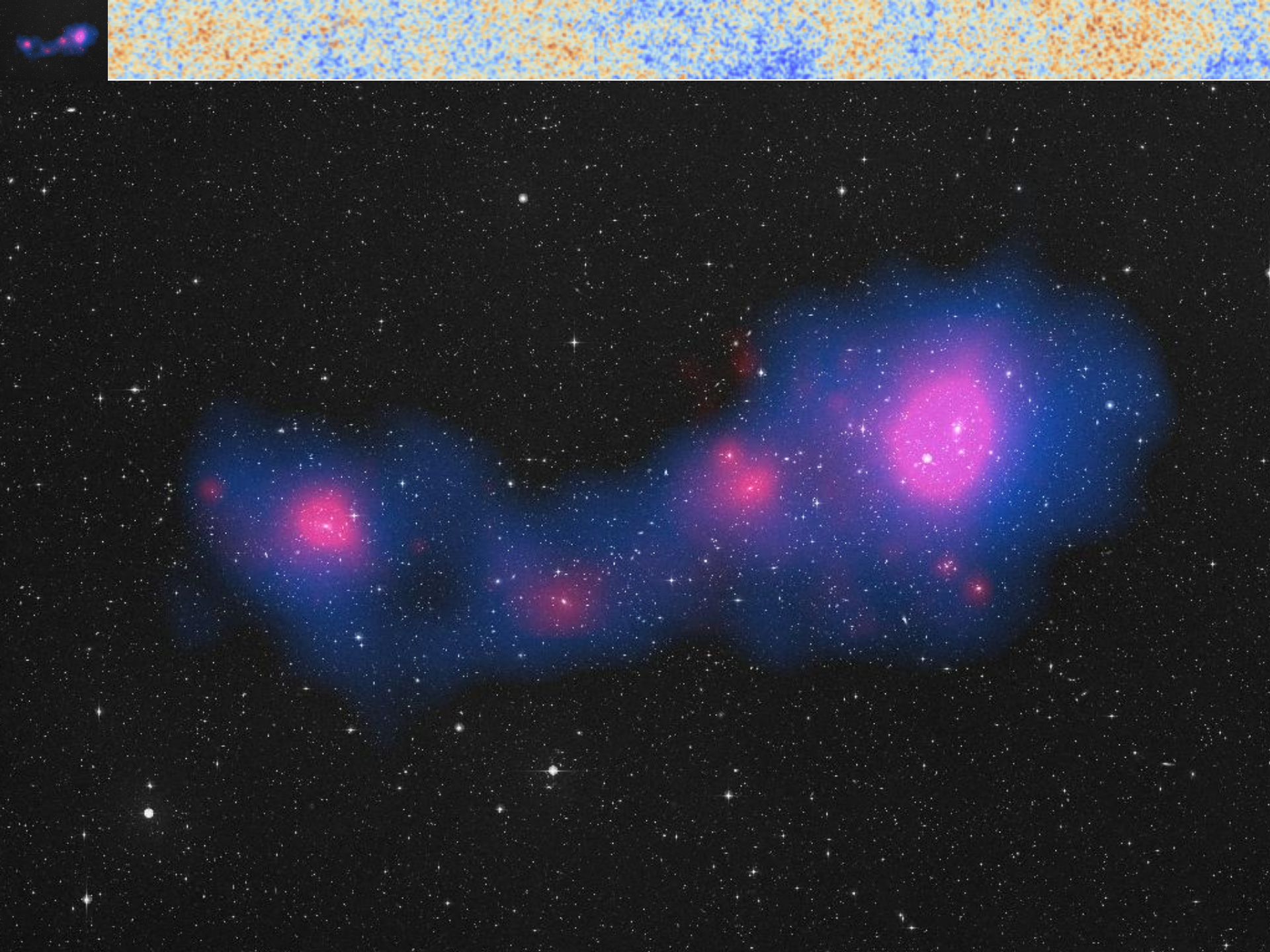
→ CIB luminosity function

Other tracers implemented in the same tool:

→ CMB lensing

→ tSZ effect

→ kSZ effect

→ Galaxy distribution

→ X-ray emission (from clusters and AGNs)