

Cat_to_Obs_K1000_P1

A quick guide to the KiDS-1000 repo

B. Giblin, 18/11/2020

The Repo - now public!

https://github.com/KiDS-WL/Cat_to_Obs_K1000_P1

KIDS-WL / Cat_to_Obs_K1000_P1

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<div style="display: flex; justify-content: space-between; align-items: center;"> cheymans Create README.md 7f08655 3 hours ago 517 commits </div>		
	2pt_data_to_fits	Update README.md last month
	Calc_1pt_Stats	Update README.md 27 days ago
	Calc_2pt_Stats	removed incomplete collection of mock analysis scripts 3 hours ago
	GGL_LensCats	Update README.md last month
	PSFRES_CORRMAP	Create README.md last month
	PSF_systests	Merged the Predictions and Predictions_xi_variousS8 directories and ... 7 days ago
	Predictions	Update README.md yesterday
	Shear_Ratio_Test	Added two extra files to this directory which were used in producing ... 7 days ago
	data	Create README.md 3 hours ago
	src	Create README.md 28 days ago
	.gitignore	Added .DS_Store last month
	LICENSE	Create LICENSE last month
	README.md	Update README.md yesterday

About

KIDS-1000 scripts to convert shear catalogues to 2pt and 1pt observables.

Readme

MIT License

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Contributors 5

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https://github.com/KiDS-WL/Cat_to_Obs_K1000_P1

- Asgari et al. (2020) - cosmic shear
- Heymans et al. (2020) - 3x2pt
- Giblin et al. (2020) - shear catalogue null-tests
- Blake et al. (2020) - GGL
- Joachimi et al. (2020) - methodology
- Hildebrandt et al. (2020) - redshift calibration

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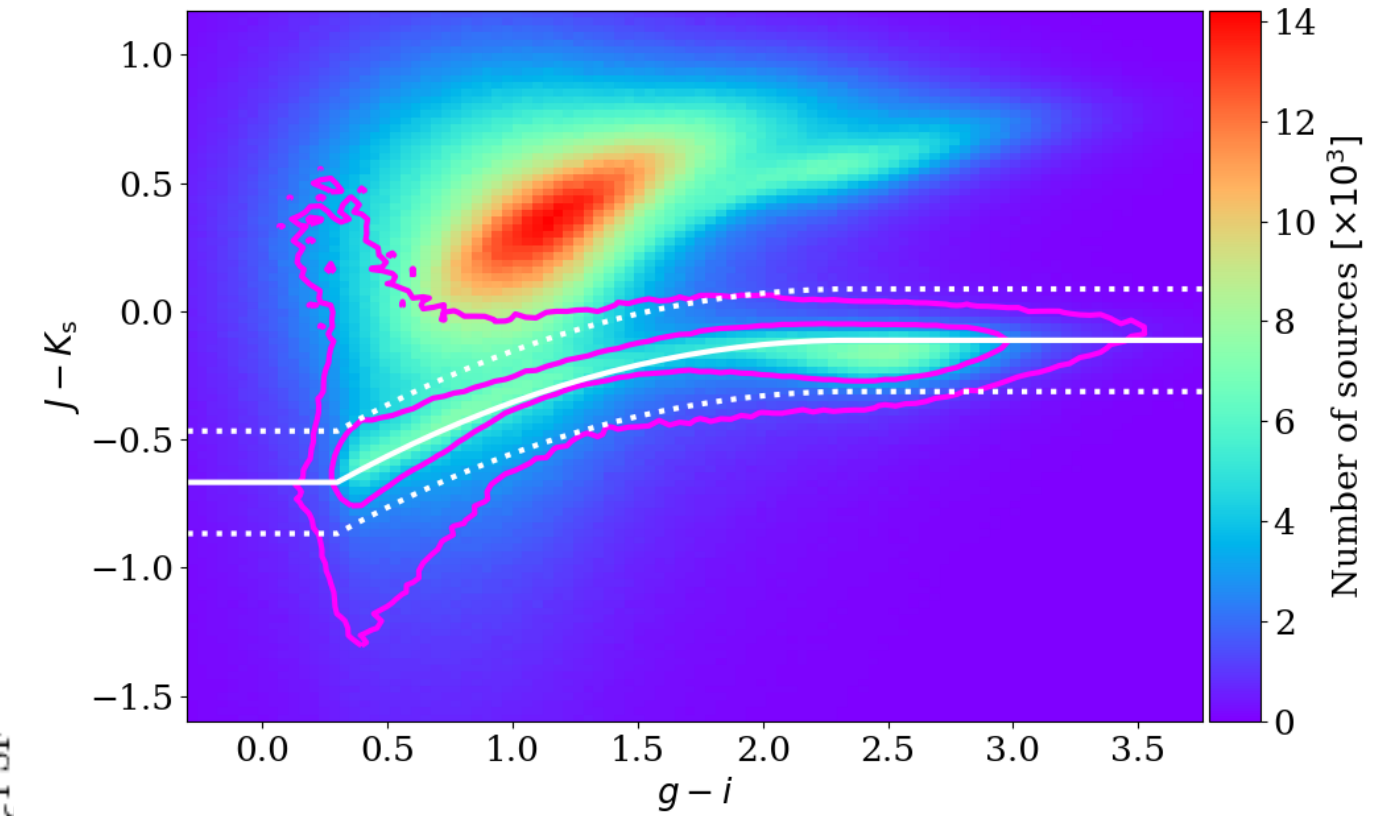
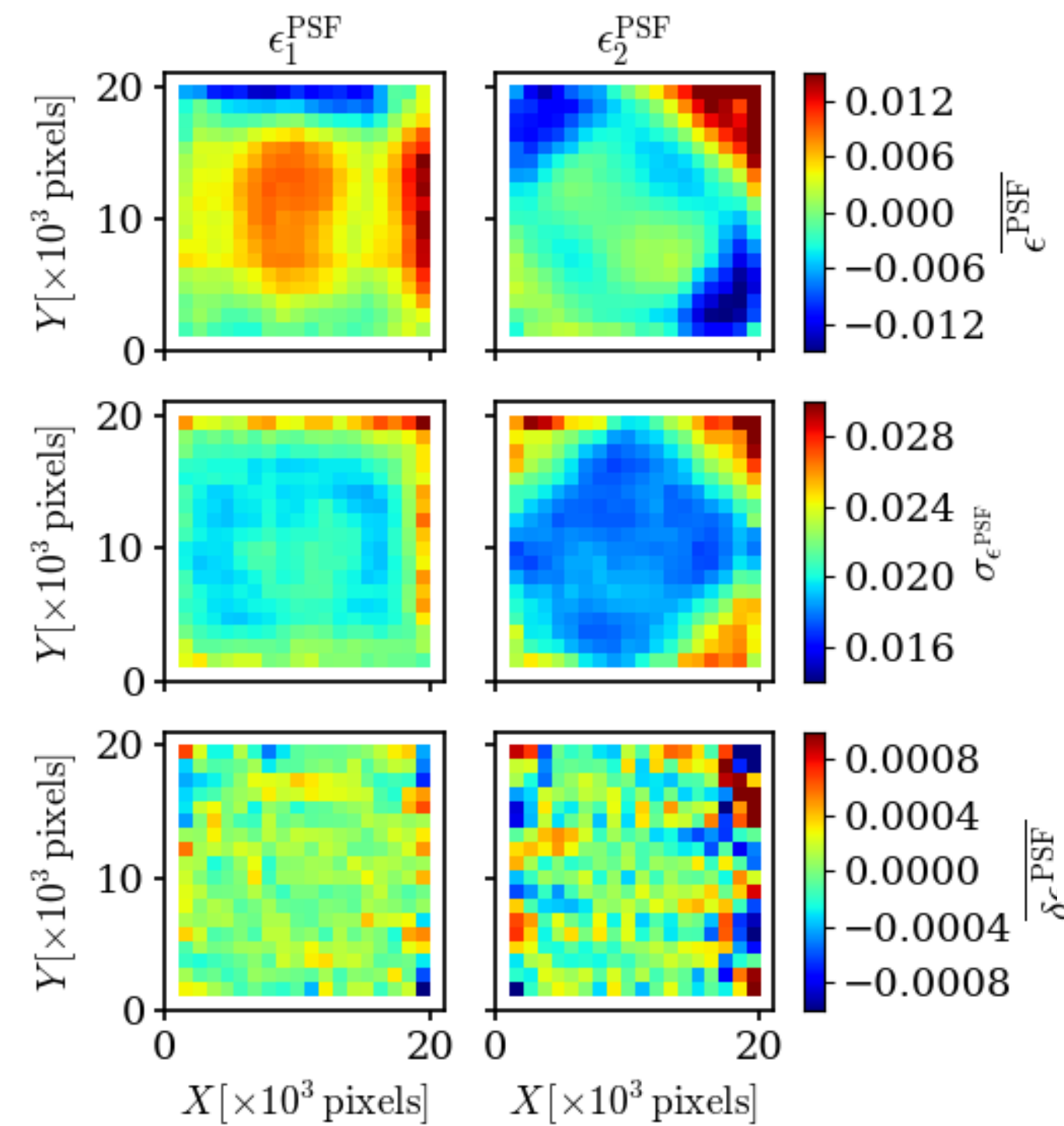
Contributors5

DISCLAIMER:
colour-coding
is no indication of
the division of labour!

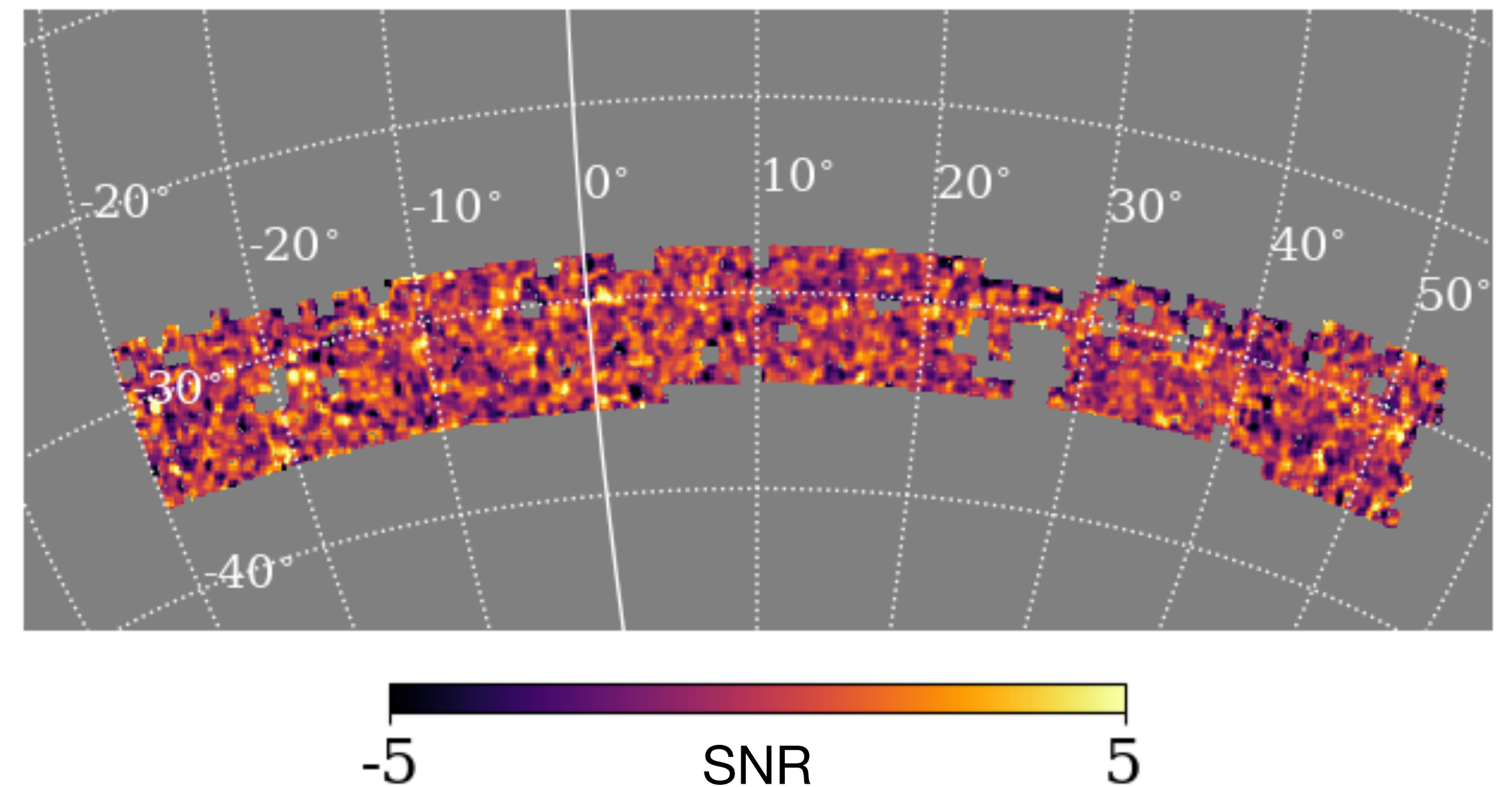
Calc_1pt_Stats

Contacts: Giblin, Heymans

- Codes to simply plot quantities X vs Y from the K1000 catalogues, e.g.:
 - e1/e2 VS ZB or mag.
 - $e1^{PSF}/e2^{PSF}$ VS (X,Y) chip position.
- Histogram in colour-colour space.
- Produce & plot K1000 mass maps.



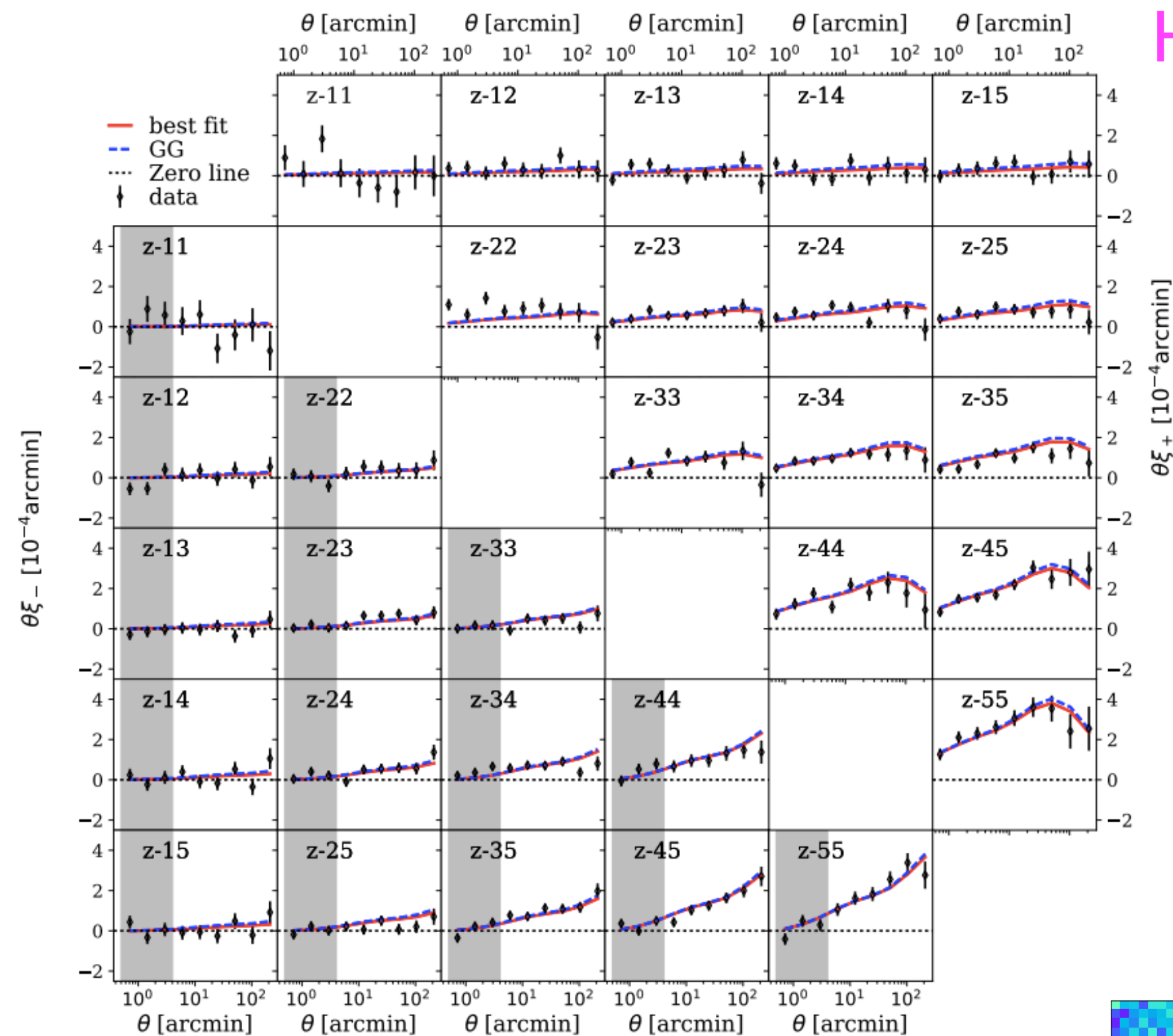
Giblin et al. (2020)



Calc_2pt_Stats

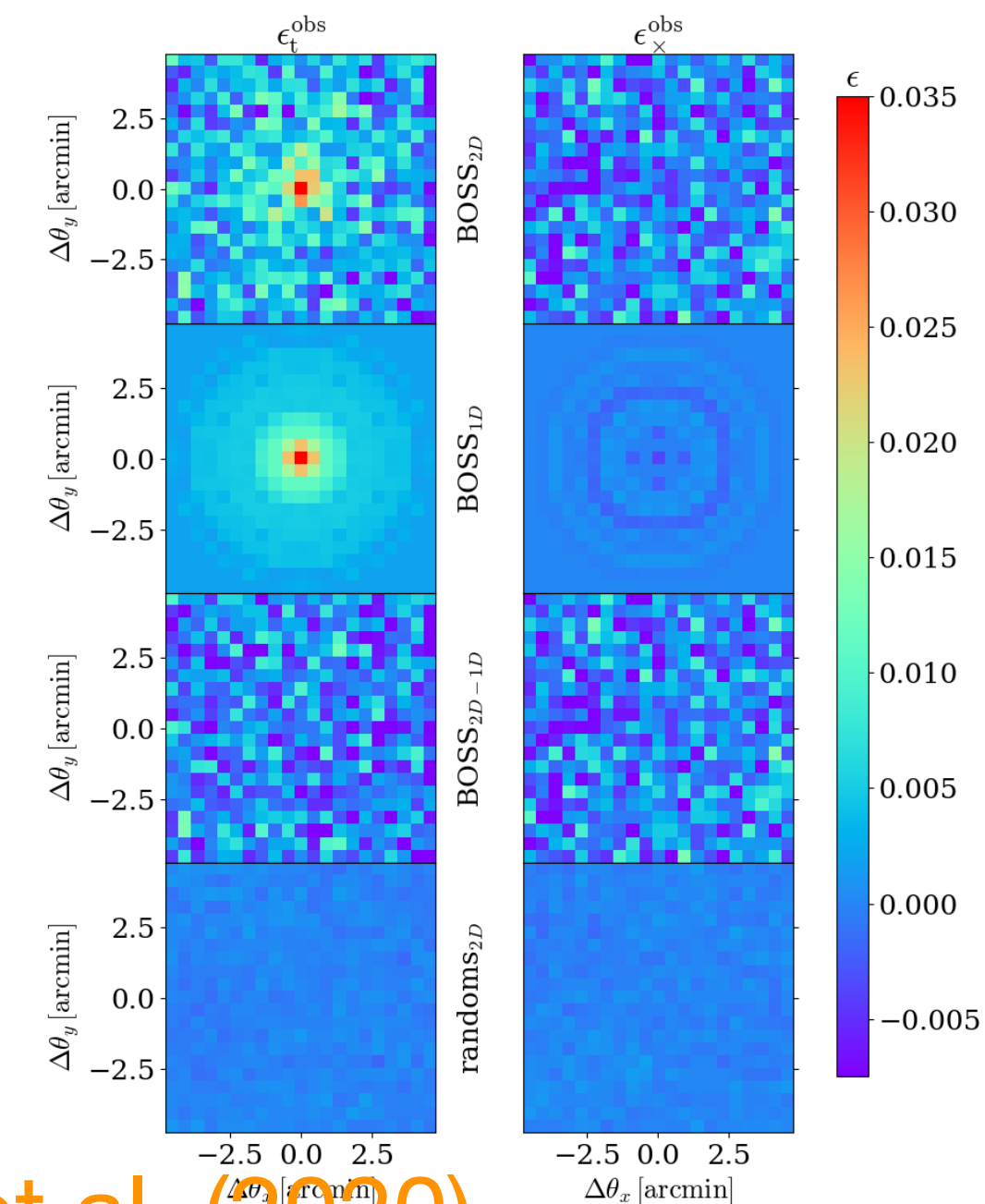
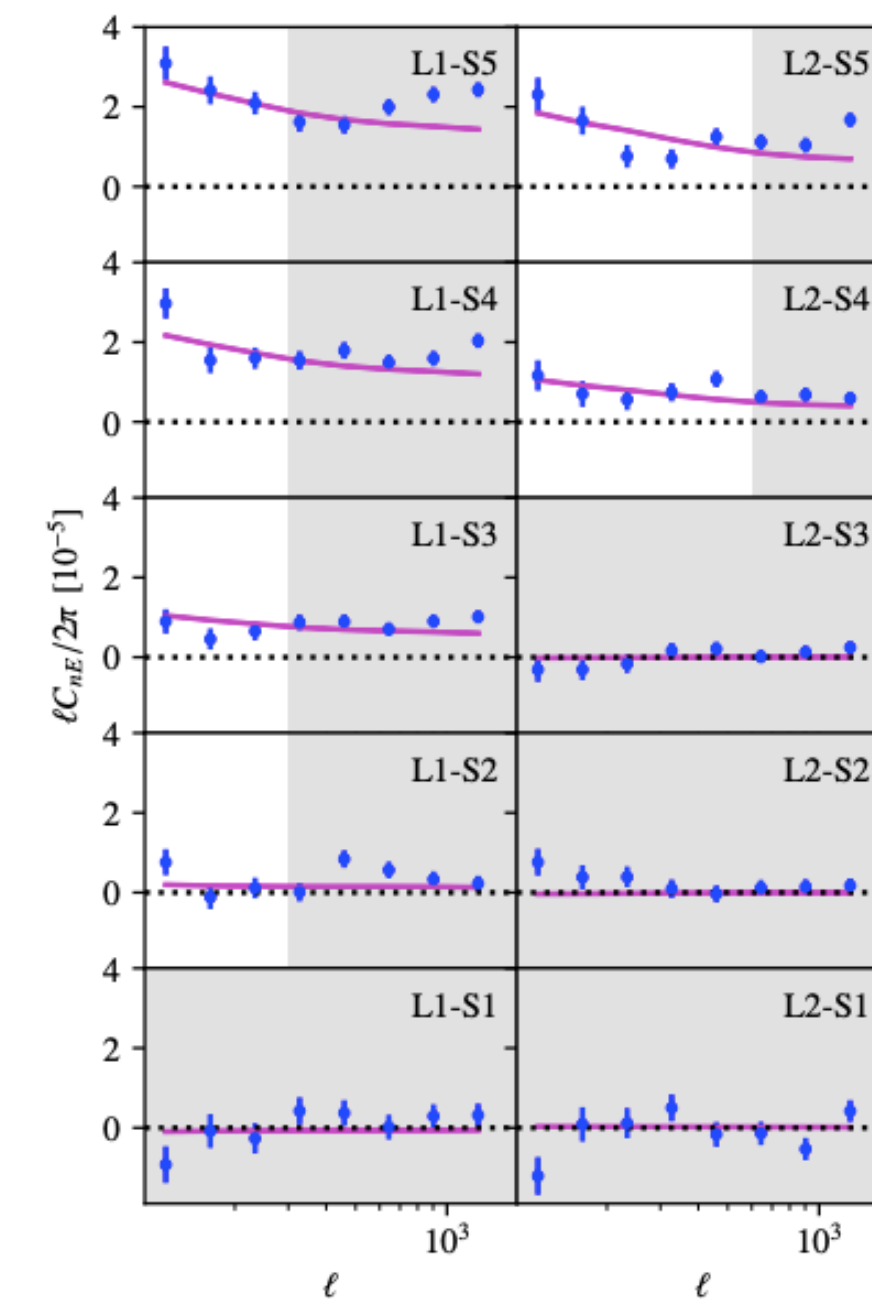
Contacts: Asgari, Heymans, Giblin

- Codes to measure two-point stats from the data: $\xi_{+/-}$, γ_t , $C(\ell)$.
- Codes to calculate the 2D $\gamma_t(X, Y)$.



Asgari et al. (2020)

Heymans et al. (2020)

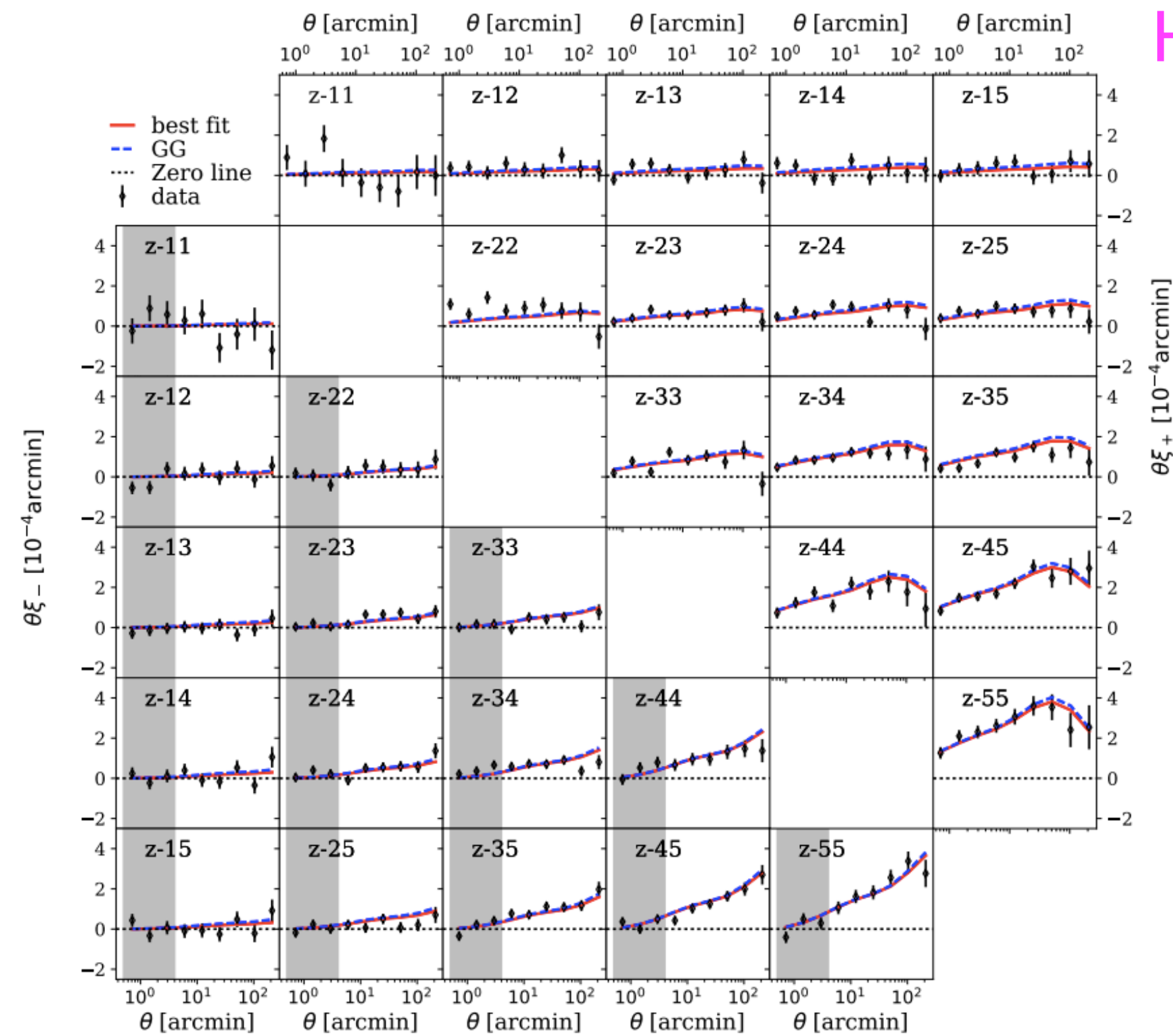


Giblin et al. (2020)

2pt_data_to_fits

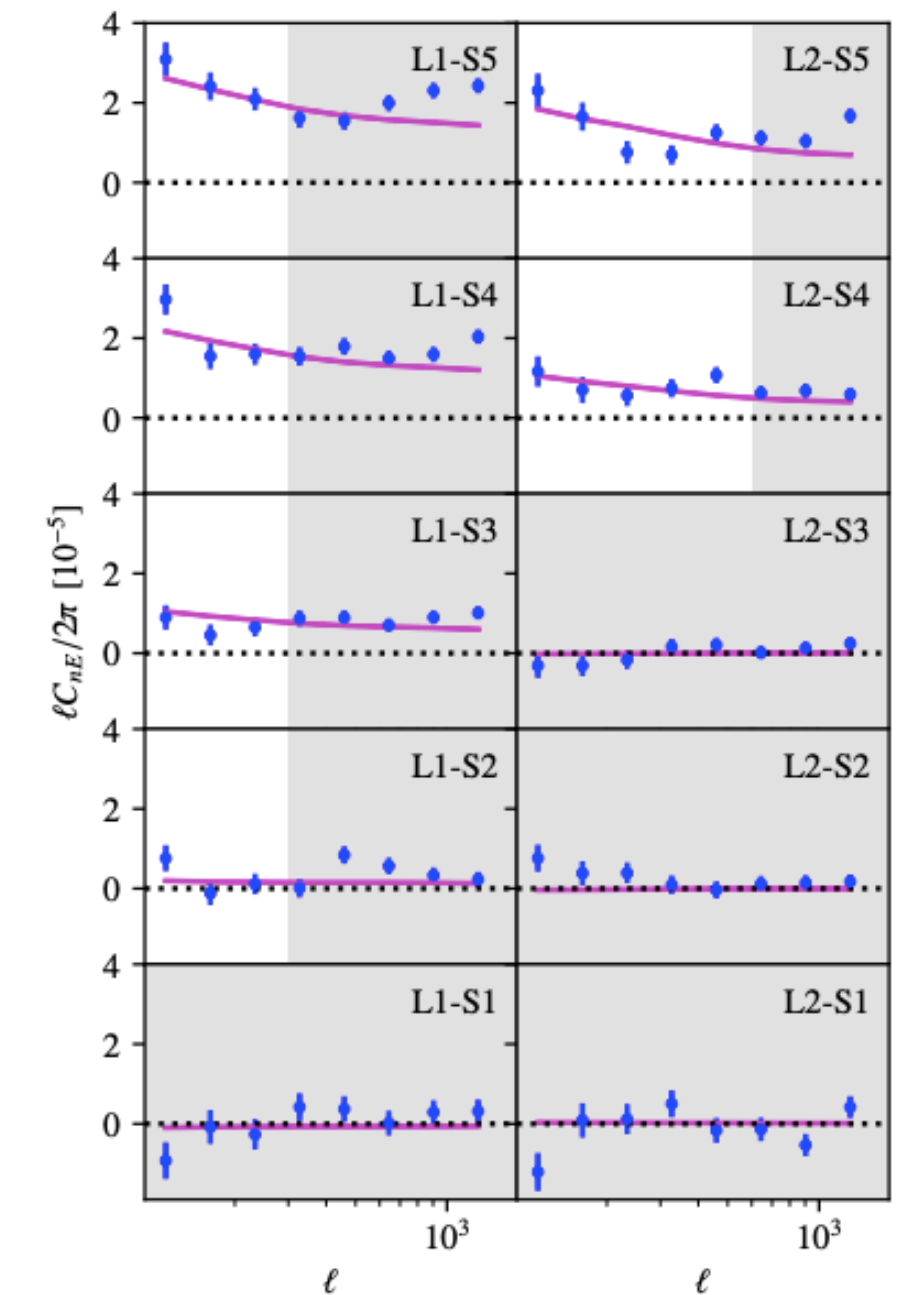
Contacts: Asgari, Heymans

- Takes the two-point stats produced in Calc_2pt_Stats and saved in ascii format, and converts them into a single fits table, containing all z-bin combinations. Also includes the covariance & n(z).
- fits table is for use in KCAP pipelines to produce cosmological constraints.



Asgari et al. (2020)

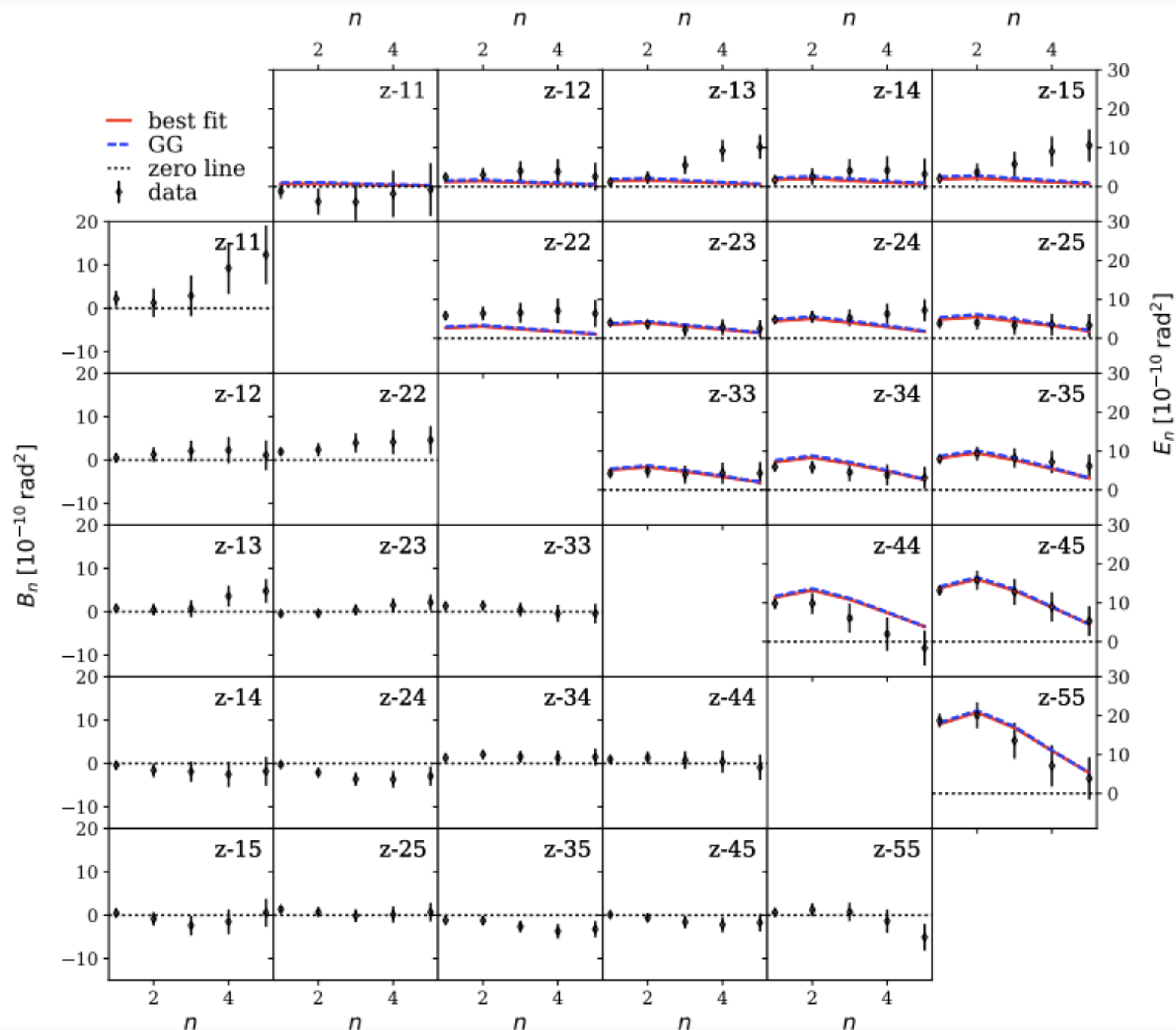
Heymans et al. (2020)



src

Contacts: Asgari, Joachimi

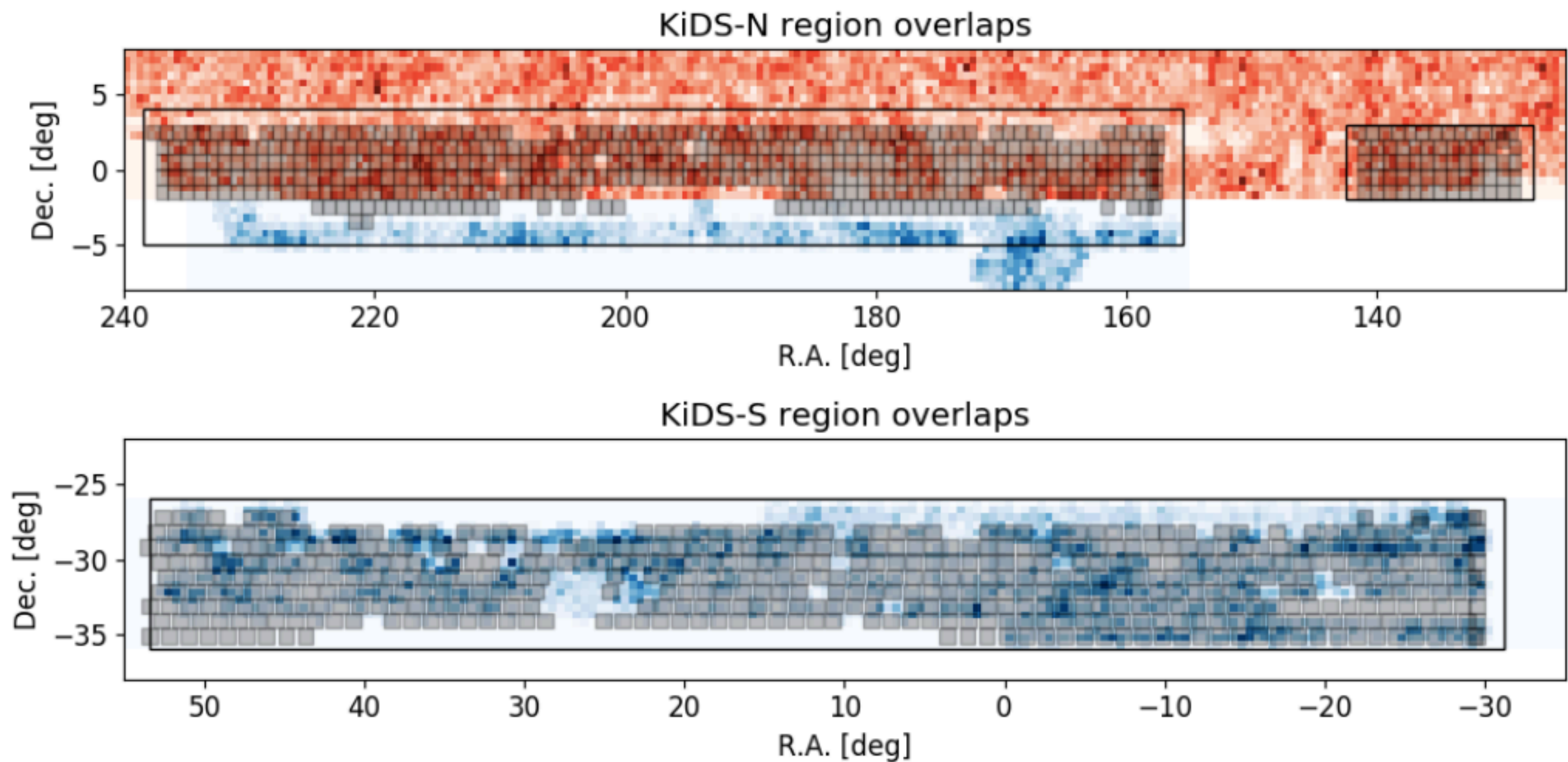
- Codes to simply convert the finely-binned $\xi_{+/-}$ measurements from Calc_2pt_Stats into COSEBIs.



GGL_LensCats

Contacts: Blake, Heymans

- Codes for identifying the overlap between KiDS and BOSS/2dFLenS.
- Produces lens/randoms catalogues for input to Calc_2pt_Stats.

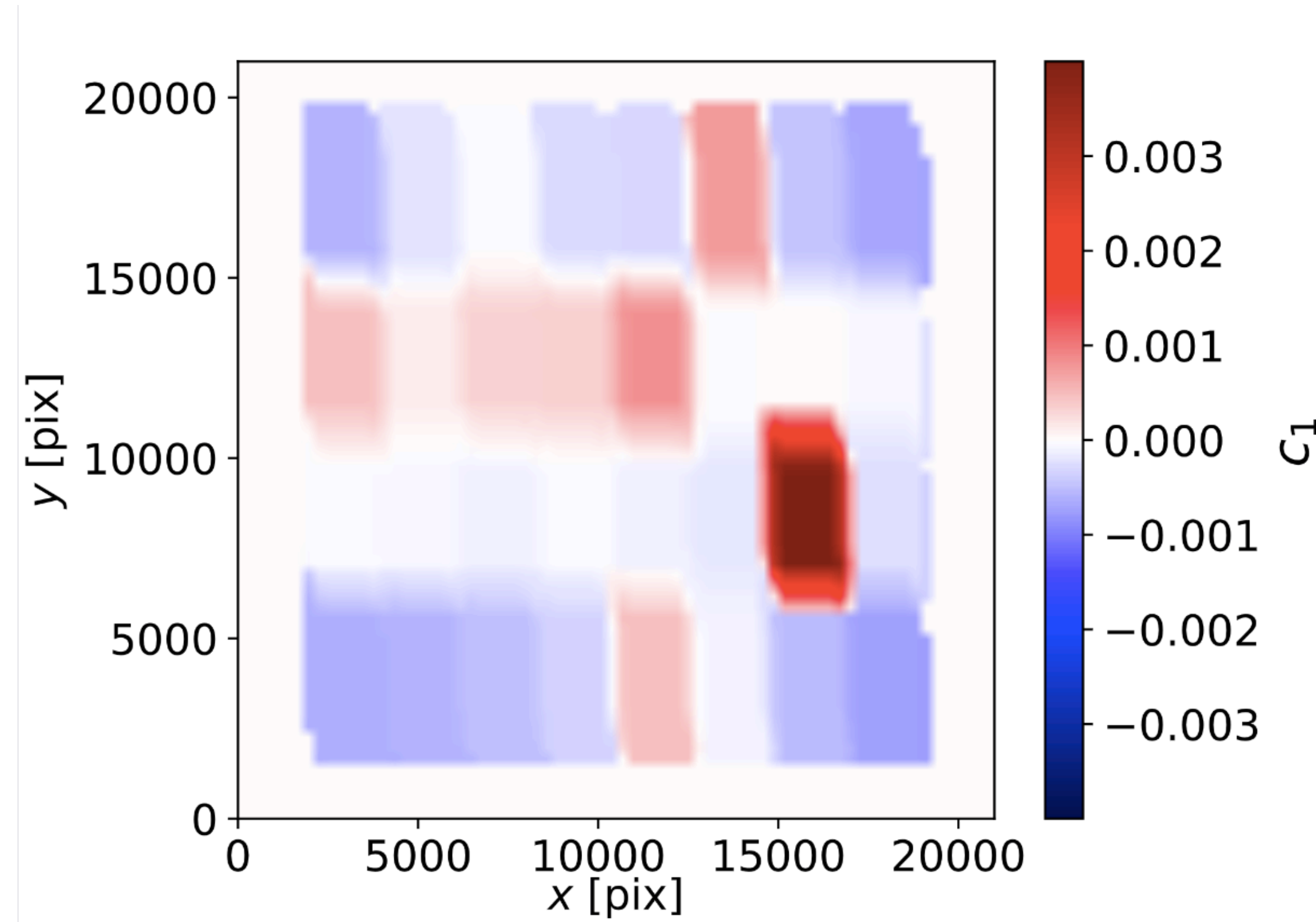


Blake et al. (2020)

PSFRES_CORRMAP

Contacts: Heymans, Giblin

- Codes to calculate the PSF residual ellipticity (c-term) as a function of magnitude for each chip in the CCD.
- This involves extrapolating the residual ellipticity to faint magnitudes.

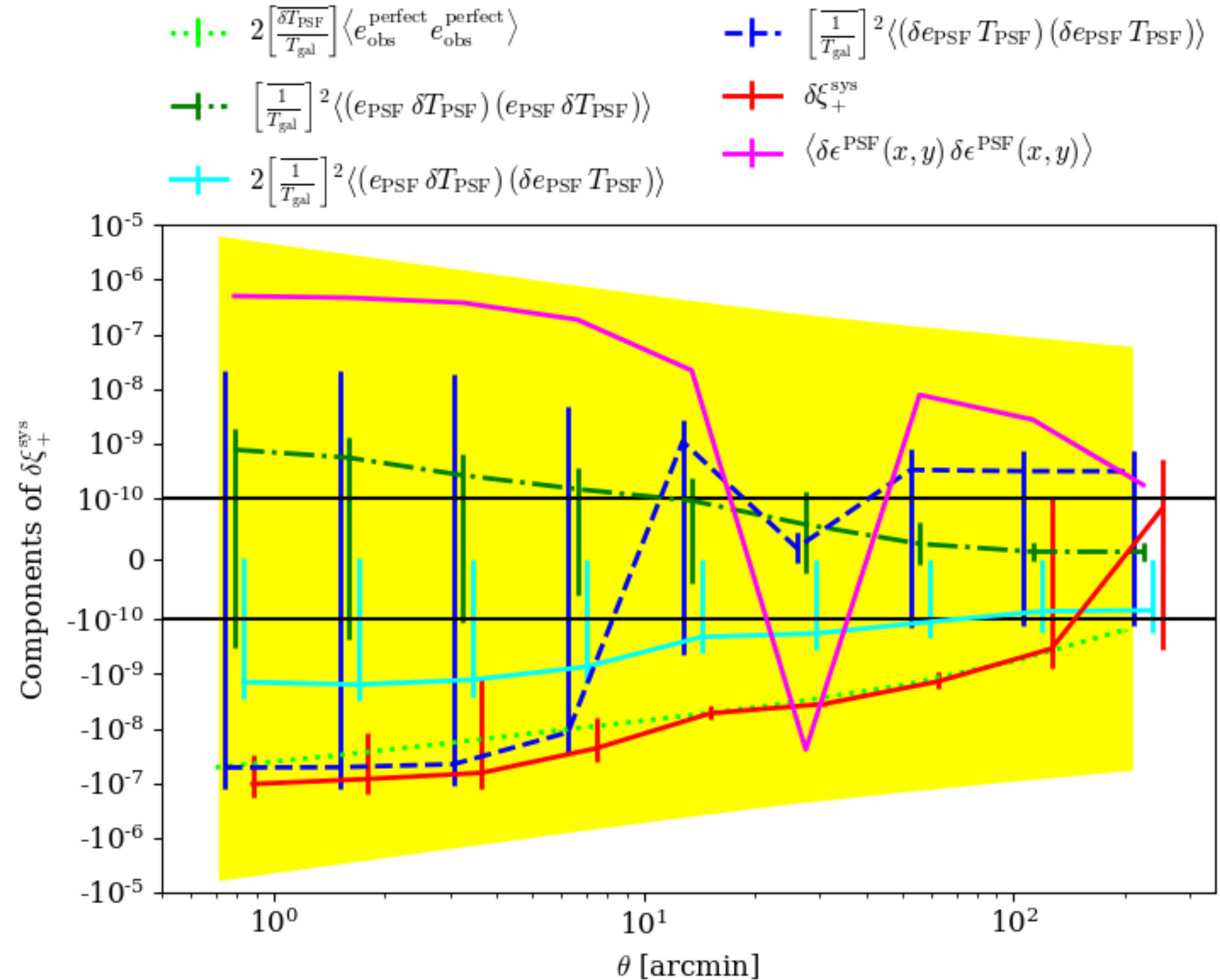


—>Results used in Giblin et al. (2020)

PSF_systems

Contacts: Giblin, Heymans

- Codes to calculate the bias to ξ_+ caused by different PSF systematic models.
- Also calculates the impact of these biases on inferred S_8.



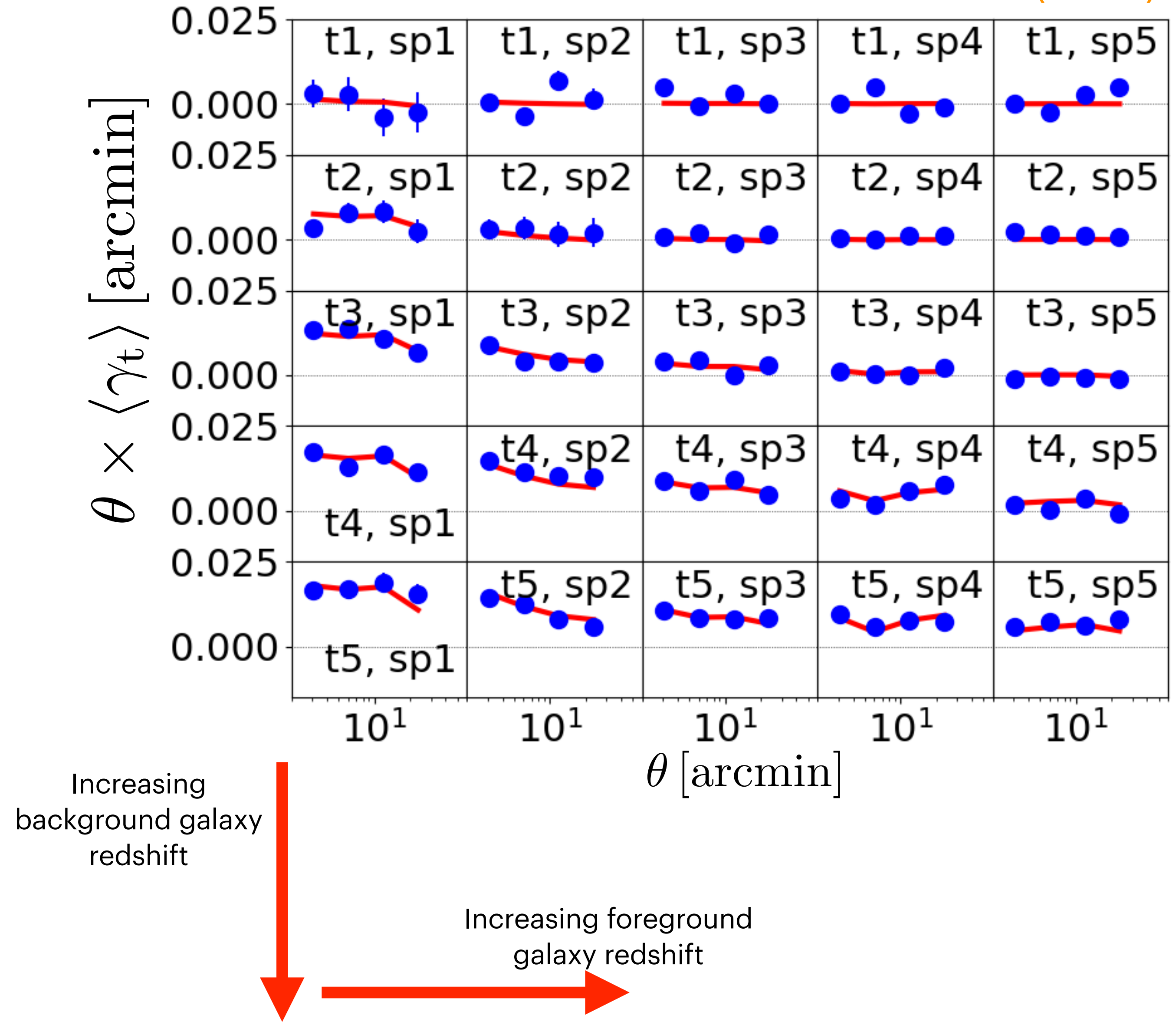
Giblin et al. (2020)

Shear_Ratio_Test

Contacts: Giblin, Hildebrandt

- Codes to perform the shear-ratio test on data (K1000xBOSS) or mocks (MICE) to verify the redshift calibration.
- Lots of options in here to add systematics into the analysis to see if the test can detect them, e.g.:
 - high-z outliers in $n(z)$
 - systematic mean shifts in the $n(z)$
 - magnification bias
 - IA uncertainty
 - multiplicative shear bias

Giblin et al. (2020)



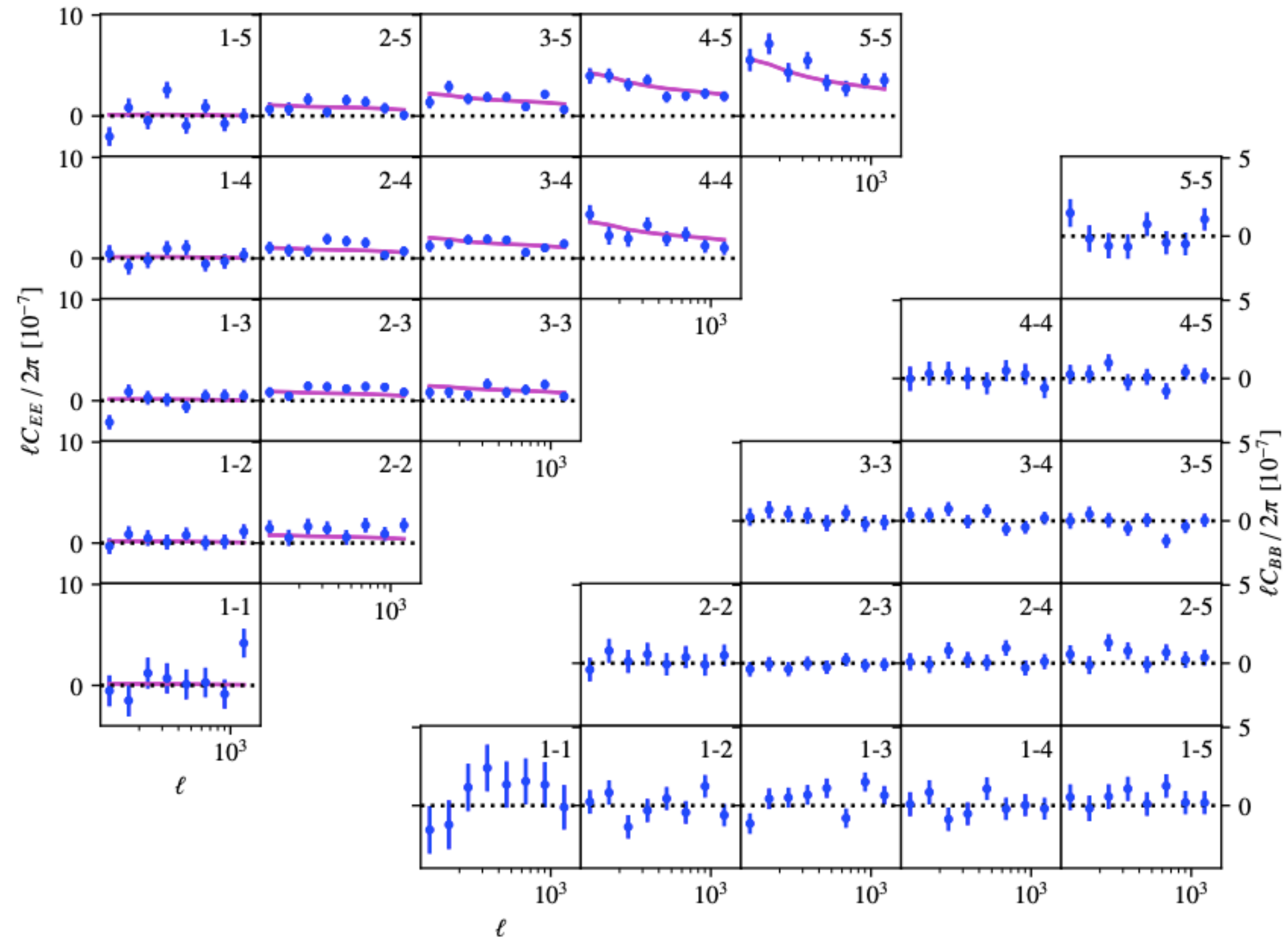
Predictions

Contacts: Asgari, Joachimi, Lin

Contains:

- Theoretical 3x2pt predictions for the best-fit cosmology of Heymans et al. (2020).
- Theoretical $\xi_{+/-}$ predictions for various S_8 values for use in PSF systematics tests (Giblin et al. 2020).
- Theoretical predictions & KCAP input files for mock analysis in Joachimi et al. (2020).

Heymans et al. (2020)



data

Contacts: Asgari, Heymans, Joachimi

Contains:

- $\xi_{+/-}$, COSEBIs & C(ell) data vectors (Asgari+20) & covariance in fits table format (made by 2pt_stats_to_fits).
- Shear calibration corrections (Kannawadi+19) for various SOM samples (Wright+20).
- KiDS-1000 $n(z)$'s - Hildebrandt+20
- BOSS clustering data - Heymans+20.
- 3x2pt covariance - Joachimi+20.

Hildebrandt et al. (2020)

