

5th Euclid CMBXC SWG

Orsay, March 21st, 22nd, 2019

Introductory Notes

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Outline

- News
- Ongoing Activities (Paper, Simulations, Estimators, ...)
- Joint activities within the Consortium (EPDD, IST:L)
- Agenda
- AOB

News and Updates

- Instrument development and delivery of subsystems on track (e.g. CU delivered by IAS to MSSL March 12th)
- Launch date stable mid 2022
- Euclid Editorial Board in place and papers already proposed for signature (cf. publication policy to be read and reported)
- Tracking system in place and used: not all activities can be validated (activities limited to attending a 1-2 hrs telecon of an active SWG assuming 3 telecons per month over 9 months (Sep-Jun) correspond to ~ 0.03 FTE; working on a paper mentioning Euclid is not a Euclid activity)

Ongoing & future high priority activities

- Forecast/Analysis tools & Estimators
 - development/optimisation/adaptation of common tools
 - Use of tools for forecasts or test-cases based on simulations
- Code comparison for CMBX forecast (cf Slack & discussion)
- Forecast paper activities (cf discussion)
- Simulations (cf presentation)
- IST forecast activities: participation of CMBX members to IST forecast paper and code comparison efforts (cf updates from participants)

Ongoing & future high priority activities

- IST likelihood: definition of interface with the activities on CMBX likelihoods (cf update from Carlo)
- Access to external CMB data suitable for the XCMB analyses: Ad-hoc group still TB constituted once the forecast tools settled

EPDD

- Googledoc of the CMBX SWG: gather the contributions + discussion during meeting
- Early April: Final document, priorities & validation = CMBX contribution
- Meeting May 6: definition of Euclid key projects
- Euclid Consortium meeting June 2019: Presentation of key projects

N.B. CMBX SWG structure: definition of WPs possible mapping of the projects with multiple publications under the projects

IST:L

Telecon March 16 IST-L (Ariel, Valeria, Vincenzo) & SWG coordinators

Just Starting : links through the coordinators of the likelihoods for each SWG
linking/sharing the likelihood WP in each SWG

For CMBX: likelihoods developed together with the estimates in the WP
coordination by Fabien and Paolo who are the links with IST-L

SWG Breakdown

WP1: Simulations for CMBX [Carbone, Baldi]

WP1.1 ray tracing for CMB lensing and for ISW [Fabbian]

WP1.2 Nbody simulations [Carbone]

WP2: Integrated Sachs-Wolfe effect, incl Likelihood [Douspis, Illic]

WP2.1 ISW with Xcorel galaxies [Finelli]

WP2.2 ISW with stacking of voids/super-cluster [Illic]

WP2.3 ISW reconstruction [Starck ?]

WP3: Correlation of CMB lensing with LSS Tracers, incl Likelihood [Baccigalupi]

WP3.1 galaxy-CMB lensing [Fabbian, Bianchini]

WP3.2 galaxy lensing-CMB lensing [??, Benabed]

WP4: Correlation of tSZ with LSS Tracers, incl Likelihood [Aghanim]

WP4.1 tSZ Xcorrel with galaxy/shear and (super) clusters [Aghanim]

WP4.2 kSZ Xcorrel with galaxies [Hernandez-Monteagudo]

WP5: Correlation of CIB with LSS Tracers, incl Likelihood [Hurier]

WP5.1 CIB Xcorrelation with galaxy distribution [Bethérmin]

WP5.2 CIB Xcorrelation with galaxy lensing [Hurier]

WP6: Estimators & Likelihood [Aghanim, Baccigalupi]

WP6.1 Pseudo-Cl estimators [Molinari]

WP6.2 Hybrid estimators [Gruppuso, Renzi]

WP6.3 Combined likelihoods from WP2, 3, 4, 5 [Natoli, Lacasa]

WP6.4 Data processing validation [TBD]

Measurement of the signal in WP2, WP3, WP4, WP5 includes development of individual likelihoods

Future plans/milestones

- Euclid Consortium meeting @Helsinki

Goal: Update on activities + completed forecast paper + external datasets

- IST likelihood → existing dedicated WP in SWG as interface + WPs
- Paper(s)/projects plans & preparation

Goal: Identify projects coordinated by the SWG & Focus activities on them

- SPV2 participation

Goal: estimators (incl. dev. & comp.) and probes to be included (iSW, ?)

Agenda & Goals of the meeting

- Updates on the WP activities: finalising and preparing for future activities (21/03 morning)
- SWG Forecast paper (updates and results): towards finalisation (21/03 morning & afternoon)
- SPV: lessons learned and preparing for CMBX to join SPV2 (22/03 morning)
- EPDD: Euclid CMBX projects including contributed talks (22/03 morning & afternoon)
- Actions & plans (22/03 afternoon)

Talks and Discussions: talks referring to an EPDD project are encouraged to include an illustration

Agenda

10:30 Simulations *M. Calabrese, G. Fabbian, C. Carbone*

11:00 Weak-Lensing/CIB cross correlation modeling *G. Hurier*

11:30 Discussion on Forecasts and Paper, draft review, set of remaining ACTIONS *S. Illic, D. Paoletti, J. Bermejo-Climent*

12:45 **Lunch**

14:00 CMB lensing cross correlations Fisher matrices *L. Legrand*

14:20 Higher-order lensing effects in CMB lensing cross-correlation with large-scale structures *G. Fabbian*

14:50 Paper draft review, set of remaining ACTIONS *S. Illic*

16:00 **Coffee break**

16:30 Update on cosmological parameters forecasts from a joint 2D tomographic analysis of CMB and galaxy clustering and beyond *F. Finelli, J. Berjemo-Ciment*

16:50 Review, set of ACTIONS for the following weeks and Work session on the paper *Discussion leads: C. Baccigaluppi, N. Aghanim*

Agenda

09:30 Updated on Needlet Estimators *A. Renzi*

09:50 SPV presentation and lessons learned *Hervé Aussel*

10:30 **Coffee break**

10:50 XC with voids and CMB, Imprint of DES cosmic voids in the CMB maps from Planck *P. Vielzeuf*

11:10 Cross-correlation between tSZ and IR galaxies *G. Fabbian (TBC)*

11:30 Estimators of the ISW-galaxy cross-correlation: status and prospects (with Marina Migliaccio), update on QML estimators (on behalf of A. Gruppuso) *D. Molinari*

11:50 Latest developments on the kSZ front with Angular Redshift Fluctuations *C. Hernandez-Monteagudo*

12:10 EPDD Discussion *Discussion leads: C. Baccigalupi, N. Aghanim*

15:30 Review of ACTIONs and Discussions: finalize paper, EPDD, plans of work before the Consortium meeting *Discussion leads: C. Baccigalupi, N. Aghanim*

16:00 **Meeting ends, and hacking time**