Euclid SPV3 meeting

March 20, 2023 - March 23, 2023

Institut d'Astrophysique de Paris

Scientific Program

The Third Science Performance Verification exercice (SPV3) is an ongoing project under the responsibility of F. Bernardeau, H. Aussel and P.A. Frugier. It has been launched on March 17 2021.

Its objectives are 3-fold,

- to verify that the expected performances of the Euclid project are in line with the core science objectives of the nominal mission, as described in the red book.
- to ensure the development and maintenance of tools and codes that can be used to make (quick) assessments on the evolution of the performances of the mission.
- to help the consortium gain insights into the performances of the project. One of the main objectives of the SPV exercise in indeed to identify which parts of the data vector, which aspects of the projects, are critical to reach the core objectives of the project.

To reach its objectives, the SPV3 has been organized in 3 maturity levels:

- Level 0: Proof of concept and demonstration of our ability to derive FoMd and precision on gamma from chain computations of likelihoods
- Level 1: Best guess hypothesis in terms of mission performances and level of details in the covariance matrix. Predictions will include best knowledge of instruments but residuals of systematics will not be propagated. First round of results will inform about overall performances of the mission in terms of details on the data vectors (such as binnings, scale cuts, etc).
- Level 2: More advance level in terms of mission performances and impact of modeling and calibration residuals. Residuals of systematics will be propagated with bypasses such as pypelid, E2Ebox and PSFtoolkit that need to be validated with pixel based simulations.

The meeting we are organizing has two main objectives:

1. present the SPV3 Level1 results and lesson learnt
2. consolidate the roadmap for Level 2 results

It will be organized in sessions with invited talks and submitted talks. It should also make room for discussion sessions.

The Galaxy Clustering Spec (GCsp) probe performances

The 3x2pt Weak lensing and Galay phot probe performances

IST-NL: status report of non-linear models and covariances

CLOE, status and performances

Galaxy Clustering E2E, status and roadmap

PSF tool kit, status and performances

Weak Lensing End2End box, status and performances

Discussion: preparation of DR1, SPV point of view

Discussion: requirements on SPV3 runs in the SGS

General discussion, defining roadmaps