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Measuring Intrinsic Alignments with PAUS data

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The intrinsic alignment of galaxies due to the local tidal fields during the galaxy formation and evolution are a fundamental quantity to consider in ongoing and future weak lensing analysis. They can mimic the signal of gravitational lensing and be a dominant systematic in its measurement and, thus, on the inference of cosmological parameters. Determining accurate redshifts is another key component in these analysis. The Physics of the Accelerating Universe Survey (PAUS) is a photometric survey with 40 narrow bands in the range between 4500 A° and 8500A°, that scanned 1.5 million galaxies down to i-magnitude < 23 in the~45 deg2 area of the W1 and W3 fields of CFHTLenS and of the W2 field of KiDS. PAUS data perfectly fills gaps to both problems, both IA and photo-z, as we will discuss in this talk. Photometric redshifts computed via a template-based code called BCNz will be presented, with improvement implemented in the calibration allowing to compute photometric redshifts in fields where no information of spectroscopic redshifts is available. Projected two-point correlation measurements will be performed using these high-quality photometric redshifts, and shape measurements from CFHTLS and KiDS but doubling the area of observation and reaching to fainter magnitudes with respect to previous PAUS studies (Johnston, Harry et al. A&A 2021, 646, A147).

Presenter(s) : NAVARRO GIRONES (ONLINE), David (Institute of Space Sciences (ICE-CSIC))