Poster Session #D
Binary sources of Gravitational Waves and cosmology

D12

Galaxy Clustering and Systematics Mitigation with the Dark Energy Survey Year 3 data

Martin Rodriguez Monroy (CIEMAT Madrid)

We are now in the era in which cosmological surveys will be able to answer the remaining questions about the formation and evolution of the Universe. Among them it is the Dark Energy Survey (DES), an international collaboration whose main goal is to unveil the nature of dark energy. For this purpose, it has performed a 6-year photometric survey from the Blanco Telescope at Cerro Tololo (Chile), covering nearly 5000 deg^2 of the southern sky with the filters g, r, i, z and Y and reaching magnitudes up to i = 23.7 and redshifts of about 1.2. One of DES's most powerful probes to constrain cosmological parameters is the angular galaxy clustering, described by the two point angular correlation function, $w(\theta)$, especially when combined with weak lensing measurements, the so called 3x2pt probe. As part of the measurement, we must take special care of any spurious signal introduced by spatially varying observing conditions and survey properties, such as exposure time and seeing, or astrophysical sources of contamination, like galactic extinction or stellar density. The aim of this contribution is to introduce the systematic decontamination procedure focusing on the analysis of the first three years of data (Y3), and to showcase the measurement of $w(\theta)$ in two different galaxy clustering samples used in the DES 3x2pt Y3 Key Project, and its validation in their corresponding simulations. I will show new, preliminary results from clustering for Y3 data.