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Upcoming large-scale structure cosmology results from the Dark Energy Survey Year 3

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The Dark Energy Survey (DES) has provided world leading measurements in multiple probes of the late time universe. Using probes of weak gravitational lensing, galaxy clustering, cluster cosmology and supernovae from the first year of observations, DES was able to test the Λ CDM model with greater constraining power than any other individual galaxy survey. I will present the latest updates from the upcoming DES Year 3 large scale structure cosmology results, which use an observed area three times that of Year 1. With greater statistical power, a number of analysis improvements have been implemented including photometric redshifts, observational systematic mitigation, and astrophysical systematic modelling. DES Year 3 will provide one of the most robust tests of the potential tensions in clustering amplitude between the late and early universe using the combination of galaxy clustering and weak gravitational lensing. We also forecast a 2-3% measurement of the angular diameter distance at redshift of 1 from measurements of the Baryon Acoustic Oscillation scale. The DES results and analysis techniques will pave the way for the next generation of large scale structure cosmology experiments such as LSST and DESI.

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