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Producing an SDSS-BOSS CMASS sample with imaging from the Dark Energy Survey to test gravity SUJEONG LEE, Ohio State Univ - Columbus, ERIC HUFF, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, ASHLEY ROSS, MICHAEL TROXEL, NIALL MACCRANN, AMI CHOI, Center for Cosmology and Astroparticle Physics (CCAPP), The Ohio State University, TIM EIFLER, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CHRIS HIRATA, KLAUS HONSCHEID, Center for Cosmology and Astroparticle Physics (CCAPP), The Ohio State University — We propose a test of gravity on cosmological scales using the newly-defined DES CMASS analogue (DMASS) sample. The CMASS sample is originally designed from the Sloan Digital Sky Survey and provides the most powerful redshift-space galaxy clustering measurements to date. A joint analysis of redshift-space distortions (such as those probed by CMASS) and weak gravitational lensing (currently best measured by the Dark Energy Survey) can provide a powerful cosmological-scale test of General Relativity. Unfortunately, the DES and SDSS-BOSS footprints suffer minimal overlap, primarily on the celestial equator near the SDSS Stripe 82 region. We have built a robust Bayesian model to select DMASS galaxies in the DES footprint specifically to address this lack of overlap. We show that the DMASS sample selected by this model has a fairly good match with the CMASS sample through various validations. To test models of modified gravity, we construct a data vector consisting of Year 1 DES galaxy-galaxy lensing measurements around the galaxies in the DMASS sample and the existing SDSS redshift-space distortion measurements from BOSS.

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