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Baryon acoustic oscillations in thin redshift shells from BOSS DR12 and eBOSS DR16 galaxies

In an age of large astronomical datasets and severe cosmological tensions, the case for model independent analyses is compelling. We present a set of 14 baryon acoustic oscillations measurements in thin redshift shells with 3% precision that were obtained by analyzing BOSS DR12 and eBOSS DR16 galaxies in the redshift range $0.32 < z < 0.66$. Thanks to the use of thin shells, the analysis is carried out using just redshifts and angles so that the fiducial model is only introduced when considering the mock catalogs, necessary for the covariance matrix estimation and the pipeline validation. We compare our measurements, with and without supernova data, to the corresponding constraints from Planck 2018, finding good compatibility. A Monte Python module for this likelihood is available at github.com/ranier137/angularBAO.

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