

DESI Y1: Cosmological Constraints from the Measurements of Baryon Acoustic Oscillations

The Baryon Acoustic Oscillations (BAO) is a powerful large-scale structure probe that is used to constrain dark energy models, and is the main goal of the latest large cosmology survey, eBOSS and Dark Energy Spectroscopic Instrument (DESI). I will present DESI first-year Data Release (Y1) cosmological results with a particular focus on the measurement of BAO from Lyman- α forest. We measure the expansion of the universe at $z_{\text{eff}} = 2.33$ with 2% precision, $H(z_{\text{eff}}) = (239.2 \pm 4.8) (147.09 \text{ Mpc/rd}) \text{ km/s/Mpc}$, and the transverse comoving distance with 2.4% precision, $DM(z_{\text{eff}}) = (5.84 \pm 0.14) (\text{rd}/147.09 \text{ Mpc}) \text{ Gpc}$. Together with other DESI BAO measurements using galaxies or quasars at lower redshifts, these results are used to constrain cosmological parameters.

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