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Testing LCDM with eBOSS / SDSS

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In this talk I will review recent progress that the SDSS-IV / eBOSS collaboration has made in constraining cosmology from the clustering of galaxies, quasars and the Lyman-alpha forest. The SDSS-IV / eBOSS collaboration has measured the baryon acoustic oscillation (BAO) and redshift space distortion (RSD) features in the correlation function in redshift bins from $z \sim 0.15$ to $z \sim 2.33$. These features constitute measurements of angular diameter distances, Hubble distances, and growth rate measurements. A number of consistency tests have been performed between the BAO and RSD datasets and additional cosmological datasets such as the Planck cosmic microwave background constraints, the Pantheon Type Ia supernova compilation, and the weak lensing results from the Dark Energy Survey. Taken together, these joint constraints all point to a broad consistency with the standard model of cosmology Λ CDM + GR, though they remain in tension with local measurements of the Hubble parameter.

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