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Cosmology at z 2.4 from the Baryon Acoustic Oscillations measured in the SDSS/DR11 BOSS-LyA quasar sample ANDREU FONT-RIBERA, Lawrence Berkeley National Laboratory, DAVID KIRKBY, Department of Physics and Astronomy, University of California, Irvine, TIMOTHEE DELUBAC, CEA, Centre de Saclay (France) and Laboratoire d'Astrophysique, École Polytechnique Fédérale de Lausanne (EPFL, Switzerland), NICOLAS BUSCA, APC, Universite Paris Diderot-Paris 7 (France), JAMES RICH, CEA, Centre de Saclay (France), JULIAN BAUTISTA, APC, Universite Paris Diderot-Paris 7 (France), ANZE SLOSAR, Brookhaven National Laboratory, STEPHEN BAILEY, Lawrence Berkeley National Laboratory, BOSS COLLABORATION[1] — The Baryon Acoustic Oscillation (BAO) scale, imprinted in the distribution of matter in the Universe, can be used to study the geometry of the Universe as a function of redshift (or cosmic time). Using a total of 160 000 high-redshift quasar spectra at z $>$ 2.15 from the Sloan Digital Sky Survey III (SDSS-III) Data Release 11 (DR11), we are able to measure the BAO scale at high redshift (z 2.4), both in the auto-correlation of the transmitted flux fraction of the observed flux of a quasar in the Lyman alpha forest region (Delubac et al., in preparation) and in its cross-correlation with the density of quasars (Font-Ribera et al. 2013). From the measurement of the BAO scale along and across the line of sight, we are able to measure the Hubble parameter and the angular diameter distance at z 2.4 with an accuracy better than 3%.

[1]Baryon Oscillation Spectroscopic Survey

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