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Clustering analysis of the DR16 eBOSS quasar sample

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I will present the clustering analysis of quasars of the final data release (DR16) of eBOSS. The sample contains $343\,708$ quasars between redshifts $0.8 \leq z \leq 2.2$ over $4699\,\mathrm{deg}^2$. We calculate the Legendre multipoles (0,2,4) of the anisotropic power spectrum and perform a BAO and a Full-Shape (FS) analysis at the effective redshift $z\mathrm{eff} = 1.480$. The errors include systematic errors that amount to 1/3 of the statistical error. The systematic errors comprise a modelling part studied using a blind N-Body mock challenge and observational effects studied with approximate mocks to account for various types of redshift smearing and fibre collisions. In the FS analysis, we fit the power spectrum using a model based on Regularised Perturbation Theory, which includes Redshift Space Distortions and the Alcock-Paczynski effect.

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