High-accuracy redshift measurements for galaxy clusters at z < 0.45 based on SDSS-III photometry

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Abstract

© 2015, Pleiades Publishing, Inc. A new method for measuring the redshifts of galaxy clusters based on photometric SDSSIII data is presented. Highly accurate photo-z measurements for red-sequence galaxies using machine learning techniques on a training sample of luminous red BOSS LOWZ galaxies allow the redshifts of clusters at z < 0.45 to be determinedwith an accuracy $\sigma_{norm} = 0.011$. The accuracy of the proposed method has been estimated on galaxy clusters from the 400d catalog.

Keywords

galaxy clusters, machine learning, observational cosmology, photometric redshifts, SDSS