

OPTICAL GALAXY CLUSTER DETECTION ACROSS A WIDE REDSHIFT RANGE

V5-PDF44606 | 2010-11-19 | 64 Pages | Size 2,440 KB

The past decade is one of the most exciting period in the history of physics and astronomy. The discovery of cosmic acceleration dramatically changed our understanding about the evolution and constituents of the Universe. To accommodate the new acceleration phase into our well established Big Bang cosmological scenario under the frame work of General Relativity, there must exist a very special substance that has negative pressure and make up about 73% of the total energy density in our Universe. It is called Dark Energy. For the first time people realized that the vast majority of our Universe is made of things that are totally different from the things we are made of. Therefore, one of the major endeavors in physics and astronomy in the coming years is trying to understand, if we can, the nature of dark energy. Understanding dark energy cannot be achieved from pure logic. We need empirical evidence to finally determine about what is dark energy. The better we can constrain the energy density and evolution of the dark energy, the closer we will get to the answer. There are many ways to constrain the energy density and evolution of dark energy, each of which leads to degeneracy in certain directions in the parameter space. Therefore, a combination of complimentary methods will help to reduce the degeneracies and give tighter constraints. Dark energy became dominate over matter in the Universe only very recently (at about z (almost equal to) 1.5) and will affect both the cosmological geometry and large scale structure formation. Among the various experiments, some of them constrain the dark energy mainly via geometry (such as CMB, Supernovae) while some others provides constraints from both structures and geometry (such as BAO, Galaxy Clusters) Galaxy clusters can be used as a sensitive probe for cosmology. A large cluster catalog that extends to high redshift with well measured masses is indispensable for precisely constraining cosmological parameters. Detecting clusters in optical bands is very efficient. Multi-color CCD photometry allows combined detection and redshift estimation for clusters across broad redshift ranges. However, the lack of precise information about galaxy positions along the line of sight leads to contamination by projection, which plagues both cluster detection and the measurement of their properties. The dominance of red sequence galaxies, tightly clustered along the E/S0 ridgeline, provides a powerful method for de-projecting field galaxies. We developed

an Error Corrected Gaussian Mixture Model to fit the galaxies color distribution around clusters by taking into account the measurement errors. By this technique, we can detect the red sequence color clustering and extract unbiased information about the evolution of the red sequence ridgeline and its width. Precision measurements of ridgelines yields better estimates of cluster richness and possibly their dynamical state, leading to better estimates of cluster mass. By using the red sequence clustering in color space identified from the Error Corrected Gaussian Mixture Model, together with the projected NFW filter in the projected RA/DEC plane, we developed a new and efficient cluster finding algorithm that can reliably detect galaxy clusters across the redshift range from 0.1 to 1.4. We have also run the cluster finder on legacy SDSS DR7 data and assembled an approximately volume limited cluster catalog across redshifts from 0.1 to 0.5. The algorithm has been tested against a Monte Carlo mock catalog, showing the identified clusters are highly complete and pure. With the completion of this thesis, we build the first and essential step towards precision cluster cosmology. Meanwhile, the large optical cluster catalog across a wide redshift range makes possible the systematic and detailed investigation of cluster formation and evolution.

Are you looking for Ebook Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf? You will be glad to know that right now Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf is available on our online library. With our online resources, you can find Applied Numerical Methods With Matlab Solution Manual 3rd Edition or just about any type of ebooks, for any type of product.

Best of all, they are entirely free to find, use and download, so there is no cost or stress at all. Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf may not make exciting reading, but Applied Numerical Methods With Matlab Solution Manual 3rd Edition is packed with valuable instructions, information and warnings. We also have many ebooks and user guide is also related with Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf and many other ebooks.

We have made it easy for you to find a PDF Ebooks without any digging. And by having access to our ebooks online or by storing it on your computer, you have convenient answers with Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf. To get started finding Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf, you are right to find our website which has a comprehensive collection of manuals listed.

Our library is the biggest of these that have literally hundreds of thousands of different products represented. You will also see that there are specific sites catered to different product types or categories, brands or niches related with Optical Galaxy Cluster Detection Across A Wide Redshift Range Pdf. So depending on what exactly you are searching, you will be able to choose ebooks to suit your own needs.

Download full version PDF for Optical Galaxy Cluster Detection Across A Wide Redshift Range using the link below:

**Download or Read:
OPTICAL GALAXY CLUSTER DETECTION ACROSS A WIDE REDSHIFT
RANGE PDF Here!**

