[GC15] Measurement of local density of galaxies with spectra and CMR and detection of galaxy clusters.

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SDSS spectroscopic survey provides a useful tool to study spatial distribution of galaxies. This enable us to measure 3-d local density of galaxies but the data are restricted by incompleteness of spectroscopic survey especially in dense region. In order to overcome such problem, we adopted color-magnitude relation (hereby, CMR) and added photometrically-selected member galaxies to estimate 2-d local density. The new density via spectroscopy and CMR is supported by apparent environment information on images and CTIO/Hydra observation on Abell 2670. 462 galaxy clusters and groups are found by detecting overdense region. We will provide cluster catalogue and demonstrate various properties of galaxies in a cluster and in a field.

[GC16] Rotating Galaxy Clusters in SDSS and 2dFGRS

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We present a result of searching for galaxy clusters that show an indication of global rotation using a spectroscopic sample of galaxies in Sloan Digital Sky Survey (SDSS) and 2dF Galaxy Redshift Survey (2dFGRS). We have determined the member galaxies of 899 Abell clusters covered in SDSS and 2dFGRS using the redshift and the positional data of galaxies, and have estimated the ratio of the cluster rotation amplitude to the cluster velocity dispersion and the velocity gradient across the cluster. We have found 12 tentative rotating clusters that have large ratios of rotation amplitude to dispersion and large velocity gradients. We have determined the morphological parameters for 12 tentative rotating clusters and have investigated the substructures in the sample of tentative rotating clusters, finding from the Dressler-Shectman plots that the majority (9 out of 12) of clusters show an evidence of substructure due to the spatially correlated velocities of galaxies. We have selected six probable rotating clusters (A0954, A1139, A1399, A2162, A2169, and A2366) that show a single number density peak around the cluster center with a spatial segregation of the high and low velocity galaxies. We have found no strong evidences of a recent merging for the probable rotating clusters and have discussed the cosmological implication of probable rotating clusters.