Most of the galaxy mass is known to be occupied by dark matter. However, it is difficult to directly measure the mass and distribution of dark matter in a galaxy. Recently, the velocity dispersion of the stellar population in a galaxy's center has been suggested as a possible probe of the mass of the dark matter halo. In this study, we test and verify this hypothesis using the kinematics of the satellite galaxies of isolated galaxies. We use the Friends-of-Friends (FoF)algorithm to build a catalog of primary galaxies and their satellite galaxies from the Sloan Digital Sky Survey (SDSS) DR 12. We calculate the dynamical mass of the primary galaxies from the velocity dispersion of their satellite galaxies. We then investigate the correlation between the dynamical mass and the central velocity dispersion of the primary galaxies. The stellar velocity dispersion of the central host galaxies has a strong linear correlation with the velocity dispersion of their satellite galaxies. Also, the stellar velocity dispersion of the central galaxy is strongly correlated with the dynamical mass of the galaxy, which can be described as a power law. The results of this study show that the central velocity dispersion of the primary galaxies is a good proxy for tracing the mass of dark matter halo.

[포 GC-05] NGC 4517 Group: A New Galaxy Group in front of the Virgo Cluster

Yoo Jung Kim[1], Jisu Kang[1], Myung Gyoon Lee[1], Insung Jang[2]
[1]Seoul National University, [2]Leibniz-Institut für Astrophysik Potsdam

We present the distance measurements of two spiral galaxies NGC 4517, NGC 4592, and neighboring dwarf galaxies found in Hyper Suprime-Cam Subaru Strategic Program (HSC-SSP) wide field survey data. Distances to NGC 4517 and NGC 4592 are measured by the Tip of the Red Giant Branch method from archival Hubble Space Telescope data; $9.00^{+0.094}_{-0.260}$ Mpc for NGC 4517 and $8.90^{+0.256}_{-0.060}$ Mpc for NGC 4592. The spatial distance between NGC 4517 and NGC 4592 is 300 kpc, which is close enough for them to be considered as a group (NGC 4517 group). Using resolved stellar photometry and Surface Brightness Fluctuation (SBF) method with HSC-SSP data, we estimate the distances to three other dwarf galaxies and confirm that they are members of the group. Velocities of three of the galaxies in the NGC 4517 group show that this group is one of the galaxy groups in the near side of the Virgo Cluster infall region.

[포 GC-06] Velocity Dispersion Bias of Galaxy Groups classified by Machine Learning Algorithm

Youngdae Lee[1], Hyunjin Jeong[2], Jongwan Ko[2], Joon Hyeop Lee[2], Jong Chul Lee[2], Hye-Ran Lee[2,3], Yujin Yang[2], Soo-Chang Rey[1]
[1]Department of Astronomy and Space Science, Chungnam National Nuniversity (CNU), [2]Korea Astronomy and Space Science Institute (KASI), [3]Korea University of Science and Technology (UST)

We present a possible bias in the estimation of velocity dispersions for galaxy groups due to the contribution of subgroups which are infalling into the groups. We execute a systematic search for flux-limited galaxy groups and subgroups based on the spectroscopic galaxies with r < 17.77 mag of SDSS data release 12, by using DBSCAN (Density-Based Spatial Clustering of Application with Noise) and Hierarchical Clustering Method which are well known unsupervised machine learning algorithm. A total of 2042 groups with at least 10 members are found and ~20% of groups have subgroups. We found that the estimation of velocity dispersions of groups using total galaxies including those in subgroups are underestimated by ~10% compared to the case of using only galaxies in main groups. This result suggests that the subgroups should be properly considered for mass measurement of galaxy groups based on the velocity dispersion.

[포 GC-07] Submillimeter galaxies in the AKARI North Ecliptic Pole survey field

Dongseob Lee[1], Yeonsik Kim[2], and Hyunjin Shim[1]
[1]Department of Science Education, Kyungpook National University, [2]Department of Astronomy and Atmospheric Sciences, Kyungpook National University

SCUBA-2 North Ecliptic Pole survey, one of the ongoing JCMT large programs, is designed to obtain 850 ㎛ imaging data over ~4 deg^2 around the NEP based on the AKARI NEP-Wide survey. By August 2019, the program is 50 % complete in terms of observing time, increasing the submillimeter coverage by a factor of 2 with the comparable depth. The rms measured in the deepest center is 0.92 mJy/beam, slightly above the 850 ㎛ confusion limit. With 4 σ detection, the source count is 50 % complete at 9 mJy. The surface density of submillimeter galaxies at this flux limit is 200 deg^{-2}. Multi-wavelength identification of the 850 ㎛ sources was done through the likelihood analysis based on the