non cool-core clusters

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We report preliminary results of KaVA observations of central galaxies in cool-core and non cool-core clusters. The main goal is to study how cooling environments of galaxy clusters affect the central AGN activities especially at its innermost region. For KaVA observations, 7 radio bright AGNs have been selected from the extended Highest Flux Galaxy Cluster Sample (eHIFLUGCS; the X-ray flux limited & all sky galaxy cluster catalog) with various cooling timescales. In our previous KVN study, we have found that most AGNs in the cool-core clusters show the hint of pc-scale jet-like features while the ones in the non cool-core clusters do not. Using the KaVA 22/43 GHz data of a much higher resolution than the KVN resolution, we have investigated detailed pc-scale jet properties such as physical size, morphology, and radiative age. Based on the KaVA data, we discuss the effect of cluster cooling environment on the evolution of AGNs in the cluster center.

[포 GC-16] Comparison between the Pair Fractions of Dark Matter Halos and Galaxies in Cosmological Simulations

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We investigate the pair fractions of dark matter halos and galaxies in cosmological simulations. The cosmological simulations are performed by a tree-particle-mesh code GOTPM (Grid-of-Oct-Tree-Particle-Mesh) and the dark matter halos are identified by a halo finding algorithm PSB (Physically Self-Bound). The 'galaxy' pair fractions are obtained from galaxy catalogues of L-Galaxies semi-analytical galaxy formation runs in the Millennium database. We present and compare the pair fractions of the dark matter halos and galaxies as functions of redshifts, halo masses and ambient environments.

[포 GC-17] The Environmental Dependence of the Mass-Size Relation for the Most Massive Galaxies

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We study the environmental dependence of the mass-size relation for the most massive early type galaxies ($M>10^{10.7}M_{\odot}$) in the redshift range 0.10~0.15. The sizes of galaxies are measured by non-parametric method. We find that galaxies more massive than $10^{11.1}M_{\odot}$ show the environmental dependence in the mass-size relation. The galaxies with $M>10^{11.1}M_{\odot}$ located in the densest, cluster like environment have larger sizes and extended surface brightness profiles than their counterparts located in a low dense environment. We also find that the environmental dependence of the mass-size relation is more significant for the brightest cluster galaxies (BCGs) than non-BCGs. We use the semi analytic galaxy formation simulation based on the Millennium 1 Simulation for interpretation. Our result can be explained with a hierarchical growth of the most massive galaxies through dissipation-less merger in dense environment.

[포 GC-18] A Phase-space View of Environmentally Driven Processes in the Virgo Cluster

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We study the orbital histories of Virgo galaxies undergoing different HI gas stripping stages using phase-space diagrams. Based on the HI properties of galaxies, we find that location of galaxies is in good agreement with ram-pressure stripping predicted by numerical simulations with different infall time. For example, galaxies experiencing active gas stripping are mostly found in the first infall region showing high velocity with respect to the cluster center. Meanwhile, most galaxies that are likely to have lost gas a while ago are found in the cluster outskirts with low orbital velocities. We also discuss the cases where observational properties of galaxies and their locations in the phase-space do not well agree. In addition, we probe the phase-space of filaments and subgroups