[2]School of Physics, Korea Institute for Advanced Study
[3]Department of Astronomy & Space Science, Kyung Hee University

We aim to investigate inflow history of matters that fall into the satellite systems around a dwarf galaxy in Lambda-Cold Dark Matter model. Each satellite system has unique properties because all satellite systems have different mass inflow history by environments and/or the events such as cosmic reionization and merging with other halos. To trace mass inflow history of the satellite systems, we perform three different cosmological zoom simulations whose galaxy mass is ~$10^{10}M_{sun}$. Each initial zoom simulation covers a cubic box of $1Mpc/h^3$ with 17 million particles. Particle mass for dark matter (DM) and gas components is M_{DM} = 4.1×10^3 M_{sun} and M_{gas} = 7.9×10^2 M_{sun}, respectively. Thus, each satellite system is resolved with more than hundreds - thousands of particles. We analyze the influence of the gravitational interaction with host galaxy, baryonic matter inflow by various cooling mechanisms, and merging events with other halos on the mass inflow history of satellite systems.

[포 GC-15] The evolution of a late-type galaxy in a Coma-like cluster

Jeong-Sun Hwang[1], Changbom Park[2], Arunima Banerjee[3]
[1]Sejong University, Seoul, Korea
[2]Korea Institute for Advanced Study, Seoul, Korea
[3]Inter University Centre for Astronomy and Astrophysics, Pune, India

We study the evolution of a late-type galaxy (LTG) in a rich cluster environment by using N-body/SPH simulations. To do that we perform a set of simulations of a LTG falling in a Coma-like cluster and also the LTG colliding with early-type galaxies (ETGs) multiple times in the cluster environment. We use a catalog of the Coma cluster in order to estimate the typical number of collisions and the closest approach distances that a LTG would experience in the cluster. We investigate the cold gas depletion and star formation quenching of our LTG model influenced by the hot cluster gas as well as the hot halo gas of the colliding ETGs.

[포 GC-16] Intra-night optical variability of AGN in COSMOS field.

Joonho Kim[1], Marios Karouzos[1], Myungshin Im[1], Dohyeong Kim[1], Hyunsung Jun[2], Joon Hyeop Lee[3], Mar Mezcua Pallerola[4]
[1]Astronomy Program, Department of Physics and Astronomy, Seoul National University, [2]Jet Propulsion Laboratory, California Institute of Technology, [3]Korea Astronomy and Space Science Institute, [4]Department of Physics, University of Montreal

Optical variability is one way to probe the nature of the central engine of AGN at smaller linear scales and previous studies have shown that optical variability is more prevalent at longer timescales and at shorter wavelengths. Especially, intra-night variability can be explained through the damped random walk model but small samples and inhomogeneous data have made constraining this model hard. To understand the properties and physical mechanism of optical variability, we are performing the KMTNet Active Nuclei Variability Survey (KANVaS). Test data of KMTNet in the COSMOS field was obtained over 2 separate nights during 2015, in B, V, R, and I bands. Each night was composed of 5 and 9 epochs with ~30 min cadence. To find AGN in the COSMOS field, we applied multi-wavelength selection methods. Different selection methods means we are looking different region in unification model of AGN, and 100~120, 400~500, 50~100 number of AGN are detected in X-ray, mid-infrared, and radio selection of AGN, respectively. We performed image convolution to reflect seeing fluctuation, then differential photometry between the selected AGN and nearby stars to achieve photometric uncertainty ~0.01mag. We employed one of the standard time-series analysis tools to identify variable AGN, chi-square test. Preliminarily results indicate that intra-night variability is found for X-ray selected, Type1 AGN are 23.6%, 26.4%, 21.3% and 20.7% in the B, V, R, and I band, respectively. The majority of the identified variable AGN are classified as Type 1 AGN, with only a handful of Type 2 AGN showing evidence for variability. The work done so far confirms that there are type and wavelength dependence of intra-night optical variability of AGN.

천문우주 관측기술

[포 AT-01] The Flight Model of the NISS onboard NEXTSat-1