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[GC-21] Demography of SDSS Early-type galaxies from the perspective of radial colour gradients

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Most early-type galaxies are centrally red mainly due to metallicity gradients but centrally blue galaxies do exist, called blue core galaxy. We investigate the radial (g-r) colour gradient of early-type galaxies at $0.0 < z < 0.06$ in the 5th Data Release of the Sloan Digital Sky Survey. We first estimate the (g-r) colour gradient of early-type galaxies using the least-square fit method. We find that roughly 30 percent of the sample shows positive gradients (centrally blue), which are mostly blue in terms of (u-r) colours and show emission and strong H β absorption lines. The galaxies tend to have small velocity dispersions and are located in the star-forming region in BPT diagram. On the other hand, galaxies with negative gradients (centrally red), which are relatively massive, are located in the LINER region in BPT diagram. We also present the UV-optical colour magnitude relation of early-type galaxies using GALEX GR4 data. While galaxies with positive gradients are NUV-r blue, galaxies with negative gradients are relatively NUV-r red. The galaxies are located in different fundamental plane according to their gradients. These results indicate that the positive gradient are due to star-formation in the galaxy center. Based on the stellar population modeling, positive gradients in early-type galaxies are a transient feature that is visible only for a half billion years after star formation episode which is generally centrally concentrated.

[GC-22] Properties of Type Ia Supernova Host Galaxies in the SDSS

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We investigate the properties and environments of Type Ia Supernovae host galaxies from the Sloan Digital Sky Survey-II Supernova Survey for the Stripe 82 centered on the celestial equator. 87 SNe Ia host galaxy samples are

selected from the SDSS Main galaxy catalog at the apparent r-band magnitude range $m_r < 17.77$. We found that the color properties of SNe Ia host galaxies are slightly bluer than the main galaxies and the absolute magnitude of SNe Ia host galaxies has a higher fraction than the main galaxies when the characteristic absolute magnitude $M_{\star} < -20.5$. The distribution of the distance to nearest neighbor galaxy and the local density of SNe Ia host galaxies show that SNe Ia host galaxies prefer intermediate region compared to the main galaxies. In early type SNe Ia host galaxies, the distribution shows SNe Ia host galaxies have a more distant neighbor galaxy compared to the main galaxies.

[GC-23] Improved line measurements for SDSS DR6

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We have established a database of galaxy spectral line strengths for SDSS DR6 using an improved line measuring method. Our work includes the entire SDSS DR6 galaxies within redshift of 0.2 excluding saturated objects. The absorption line strengths measured by the SDSS pipeline are seriously contaminated by emission filling. Our code, GANDALF (gas and absorption line fitting code) performs more accurate measurements by effectively separating emission lines from absorption lines. A significant improvement has also been made on the velocity dispersion measurement, more notably in late-type galaxies. The database will be provided with new parameters that are indicative of line strength measurement quality. The database will be useful for various fields of galaxy studies including star formation and AGN activities.

[GC-24] Study of Galaxies and Star Formation with the AzTEC mm-wavelength Camera

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Ultraluminous galaxies at high-redshift emit a large fraction of the energy at submillimeter and millimeter wavelengths. These so-called Submillimeter Galaxies (SMGs) seem to be progenitors of present-day elliptical galaxies due to the expected high star formation rate (SFR). We use a new bolometer array camera, AzTEC, utilizing 144 silicon nitride