

## [구GC-31] Star formation history of infrared luminous galaxies in the SDSS

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We present preliminary results of a statistical study on star formation history of infrared luminous galaxies selected from a IRAS-SDSS matched sample. We derive their star formation histories by comparing observed optical spectra and stellar population synthetic model templates. We find that young population fraction (<500 Myr) increases with infrared luminosity, while AGN-host (based on optical line ratios) galaxies show an enhancement of star formation at intermediate age (around 1 Gyr) compared with starburst galaxies. These results support that infrared luminosity is dominated by starburst activity and that there is an evolutionary connection from starburst to AGN.

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## [구GC-32] Role of Bar Structures in Galactic Nuclear Activities

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Galactic bars are supposed to be a channel of gas inflow to the galactic center and thus possibly help nuclear star-formation and AGN activities. However, previous studies based on small local samples did not agree with this expectation. We find it necessary to examine the expectation using a large sample and so investigate the effects of bar structures on galactic nuclear activities, based on the Sloan Digital Sky Survey (SDSS) DR7. We used 6,348 late-type galaxies brighter than  $M_r = -19.0$  in the redshift range  $0.01 \leq z \leq 0.05$ . Late-type galaxies are visually classified into barred or unbarred galaxies using SDSS color composite images. We compare the fractions of galaxies showing star-formation and AGN activities among barred and unbarred galaxies as a function of optical color, stellar mass, and black-hole mass. We have found that bar enhances nuclear star-formation activity on galaxies having low stellar mass, and low black-hole mass. This effect is stronger in redder galaxies. In the case of AGN, bar effects are higher in intermediate-mass galaxies. Bars also have an effect on the strength(!) of the star-formation and AGN activity in our sample as well. Thus, it seems that nuclear activities are powered by gas inflow from galactic bar structures perhaps not always but under certain conditions.