

The environmental effect on star formation properties in galaxy pairs

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Merging is a presumable cause to transfer blue and star-forming galaxies to red and dead galaxies. Simulation shows that the interaction of two galaxies in a pair can cause the gas inflow and thus starburst in the center region of the galaxies. Many observations have found that there is enhancement of star formation in galaxy pairs. However, the enhancement may depend on the local environment (see e.g. Tonneson et al. 2014). Also, the spatial extent of the enhanced star formation in pairs is still not clear. Although many studies found the SF enhancement is in center region, there are also cases showing that the star formation widely spread to bridge and tidal tail regions. A recent work by Moreno et al. (2015) shows that pair interactions can cause the enhancement of star formation in the center, but at the same time suppress the activity at outskirts. We focus on exploring how the environment affects the properties in galaxy pairs selected from Yang et al. (2007)'s group catalog. This catalog provides us with halo mass of each pairs, which can be used to control the environment. We also use Q parameters which measure the local galaxy density of each pair (Argudo-Fernandez et al. 2015) as another approach to describe the environment. Based on this SDSS pair sample, we can statistically explore the environmental dependence of pairs. On the other hand, MaNGA IFU allows us to study the spatially resolved properties of galaxies, and therefore can further help us clarify in which part the SFR/dust is changed, and whether the spatial variation has some dependence on the environment.