

Studying star formation quenching in galaxies with MaNGA and ALMA

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Many physical mechanisms have been proposed to remove or heat up the cold gas reservoir to quench the star formation in galaxies, for example, the ram-pressure stripping, galaxy-galaxy interactions, and AGN/supernova feedback. However, it remains unclear which process is the main contributor to quenching. Galaxies in the transition phase from the star-forming sequence to the quiescent population are ideal laboratories to probe the quenching processes. By combining the spatially resolved star formation rate and gas observations from MaNGA and ALMA, respectively, we explore the relationships among star formation efficiency (SFE), specific star formation rate, and the gas contents on the kpc scales. These analyses allow us to address whether quenching is caused by the depletion in SFE or in the gas fraction and whether quenching occurs inside-out or outside-in. We will present our results and discuss their implications on the evolution of galaxies.