

Update on the interaction effects of minor mergers systems: kinematics, star formation and metallicity

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Within the Λ CDM cosmology framework, mergers or interactions play a fundamental role in the formation, growth and subsequent galactic evolution. Indeed, as shown in merger trees of hierarchical models of galaxy formation, the galactic growth is driven by accretion of other galaxies, most often minor companions. Despite their importance, these minor mergers have been less studied than major merger interactions. However minor mergers are recognized as potential agents to drive the morphological evolution of galaxies. The interaction with a small companion can generate all kinds of phenomena seen in major cases, such as tidal tails, bridges, rings, as well as form or destruct bars or spiral arms and also trigger star formation. One of the main effects is the loss of angular momentum of the gas due to the torque exerted by the small companion galaxy. This results in a significant amount of gas inflows into the nuclear region and the inner part of the disk. As consequence, chemical elements can be stirred up affecting their distribution and metallicity gradient and/or feed nuclear activity. In addition, the velocity fields of the large galaxy often shows asymmetries and irregularities due to the interaction with the smaller companion. The kinematic and photometric effects caused by minor mergers strongly depend on structural parameters, such as morphological type, baryonic-to-dark mass ratios, and orbital parameters. This talk will review photometric, kinematic and chemical properties of the minor merger systems, in order to better understand the effects that interaction may play on the evolution of their components.