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Star formation and its history in low surface brightness galaxies

Low surface brightness galaxies (LSBs) may represent a significant fraction (50% or more) of all the galaxies in the universe. However, their origin is still poorly understood due to their extreme faintness hindering in-depth observations. This situation has changed in recent years with powerful instruments enabling the study of LSBs in great detail. Giant low surface brightness galaxies (GLSBs) and Ultra-Diffuse Galaxies (UDGs) are two prominent sub-population of LSBs. I use long-slit spectroscopic data of Malin 1, the archetype of GLSB galaxies, to bring new constraints on the dynamics and star-formation rate surface density within this galaxy. In another project, I comprehensively studied a sample of 135 LSB/UDG galaxies in the Virgo cluster using a multiwavelength set of photometric data. The analysis of the photometric properties suggests that the sample predominantly consists of red UDGs, which is typical in cluster environments. Moreover, comparing their properties with galaxy evolution models indicates that almost all of the galaxies in the sample have undergone strong environmental interaction of ram-pressure stripping (RPS) events in their lifetime.

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