

Dynamical properties determination from stellar kinematics in local LIRGs: the case of ESO320-G030.

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Abstract

In recent years, integral field spectroscopy techniques (IFS) have become a powerful tool to observe Ultra/Luminous Infrared Galaxies (U/LIRGS), allowing us to carry out spatially and spectrally resolved studies. These studies aim to wide or understanding of galaxy evolution since these systems are thought to be the dominant component to the energy density of the Universe beyond $z \sim 2$. Most of the effort has been focused on a wide variety of physical processes by studying the different phases of the gas. However, stars are a key component that governs the dynamics of these complex systems, and is key to understand how U/LIRGs builds up their mass during their evolution.

In this work, we present a IFS near-IR stellar kinematic study of a local sample of 10 LIRGs observed with SINFONI at the VLT. We have extracted the line-of-sight velocity distribution (LOSVD) using the CO stellar absorption bands in the K-band and obtained the two-dimensional velocity and velocity dispersion maps of the stellar component. By combining our kinematic maps and light profiles with a Navarro-Frenk-White dark matter halo profile we have obtained the dynamical masses of these galaxies. Here we introduce this procedure as well as the main kinematic and dynamical results. (See poster).