

ABSTRACT ONLY

CHARACTERIZING THE IMPACT OF AGNS IN GALACTIC KINEMATICS: A BUTTERFLY EFFECT?

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We proposed a comprehensive study on the impact of active galactic nuclei (AGNs) in the global kinematics of spiral galaxies. In this work we compare the H α velocity fields from a sample of AGNs against a non-active control sample. Both samples are included in the Integral Field Spectroscopy (IFS) CALIFA survey. We select our AGN sample as those disk galaxies with line flux ratios – obtained from the Sloan Digital Sky Survey Spectroscopic within a 3 arcsec aperture centered in the nuclear region – located in the active region in a classical BPT diagnostic diagram. From these criteria, we select 31 AGN (Seyfert 2) galaxies. To compare these objects with their corresponding control sample, we select for each of them the galaxies that meet the following criteria from the CALIFA survey: a) total stellar mass comparable within 0,1 dex and b) similar morphology type with each AGN galaxy, and c) no morphological-evident signatures of interactions or pairs. We also account for inclination effects. We present the results from our seed objects NGC5971 and MCG-02-02-030 with 7 and 10 control galaxies, respectively. Velocity fields for these galaxies have been extracted from their datacubes using the analysis pipeline PIPE3D. We present both qualitatively and quantitative comparison of the kinematic properties of the ionized gas in these galaxies and their corresponding control sample. By means of this comparison we expect to shade some light in the impact of a parsec-scale phenomena (i.e., AGN) into the structure of galaxies as a whole, if the AGN is an element that may be cause differences in the kinematics of spiral galaxies, as a butterfly effect. Our study provides a novel observational approach to understand the actual impact of AGNs in galaxy evolution.

Keywords: galaxies: Spirals, Seyfert; Integral Field Spectroscopy, maps and velocity gas.

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