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Studying nearby disk galaxies:NGC 3982 a case for the CALIFA survey

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Abstract

CALIFA, the Calar Alto Legacy Integral Field Area survey, will provide the largest and most comprehensive wide-field IFU survey of galaxies carried out to date, combining the advantages of imaging and spectroscopy we will able to understand the origin for the observed diversity of galaxies, and the physical mechanisms -intrinsic and environmental- that are responsible for the differences as well as similarities between them. We will observe a statistically well-defined sample of ∼600 galaxies in the local universe ($0.005 < z < 0.03$) using 210 observing nights already awarded with the PMAS/PPAK integral field spectrophotometer, mounted on the Calar Alto 3.5m telescope. PPAK offers a combination of extremely wide field-of-view (>1arcmin^2) with a high filling factor in one single pointing (65%), good spectral resolution, and wavelength sensitivity across the optical spectrum. The spectra will be covering the range 3700-7000Å in two overlapping setups, one in the red (4300-7000Å) at a spectral resolution of R∼1000 and one in the blue (3700-5000Å) at R∼2000. Some of defining science drivers for the CALIFA project are the star formation and the chemical history of galaxies; improve our knowledge on the stellar and gas kinematics in galaxies, and understand the influence of the AGNs on galaxy evolution.
Our effort is committed to add another dimension to the study of nearby disk galaxies thanks to the use of 3D data. For this reason and as part of the preparatory science of CALIFA we are carrying out an extensive and detailed study of the chemical and photometric properties of a sample of galaxies previously observed with PPAK. In this poster we present the case of NGC 3982 that demonstrates the strength of the combination of IFU and multi-wavelength imaging data, a continuation of the work done for NGC 5668 (described in Marino et al. 2012).