

SPECTROPHOTOMETRIC STUDY IN THE NEAR-IR OF A SAMPLE OF MIPS SELECTED GALAXIES AT $Z \sim 2$

A. Sánchez de Miguel,¹ J. Gallego,¹ P. G. Pérez-González,¹ N. Cardiel,¹ J. Zamorano,¹ R. Guzmán,² A. González,² and N. Gruel²

Our main objective is to determine what kind of galaxies dominate the cosmic SFR density at $z \sim 2$. Our sample consists of 24 galaxies in Chandra Deep Field South, a unique field for the study of galaxy evolution (12 observed with GNIRS/GEMINI and 12 with ISAAC/VLT). We use $H\alpha$ together with the already merged X-ray, ultraviolet, optical, near and mid-infrared imaging data to obtain estimations of SFRs, metallicities, stellar and dynamical masses, AGN activity, and extinction properties. We have obtained 15 $H\alpha$ detections, 4 rotation curves, and SFR relationship for 7 galaxies. The metallicities obtained for 8 galaxies of the sample are compatible with the metallicities of local galaxies.

We have 12 high resolution spectra of galaxies at $z \sim 2$. Detections for GNIRS/GEMINI sample. Minimal $H\alpha$ and [NII] detections has $S/N \sim 3$. [NII] upper limits had a $S/N \sim 1$. Reduction had been done with REDUCE (Cardiel 1999).

Now, we are calculating dynamical masses for $z \sim 2$ galaxies. 4 galaxies had clear rotation curves corresponding to galaxies of our sample. They are being analyzed to determine the dynamic and virial masses. The preliminary values of the dynamical masses (M_D) don't match with the stellar masses (M_S) because of they trace different parts of the galaxies.

Also we are measuring the SFR relationship. The SFR have been correcter using IRX Correction (Buat et al. 2005) and $[E(B-V)]^{stars} = [E(B-V)]^{gas}$ as is discussed in (Erb et al. 2006) using the data provided by Rainbow database.

Finally, we use [NII]/ $H\alpha$ calibration (Pettini et al. 2004) to estimate Metallicities for the galaxies of our sample (Figure 1). To properly compare our data with those in the literature, we have corrected these data using the transformations of Kewley & Ellison (2008).

¹Depto. de Astrofísica y CC. de la Atmósfera, Universidad Complutense de Madrid, Apdo. Postal 28040, Madrid, Spain (alejandosanchezmiguel@fis.ucm.es).

²Department of Astronomy, University of Florida, USA.

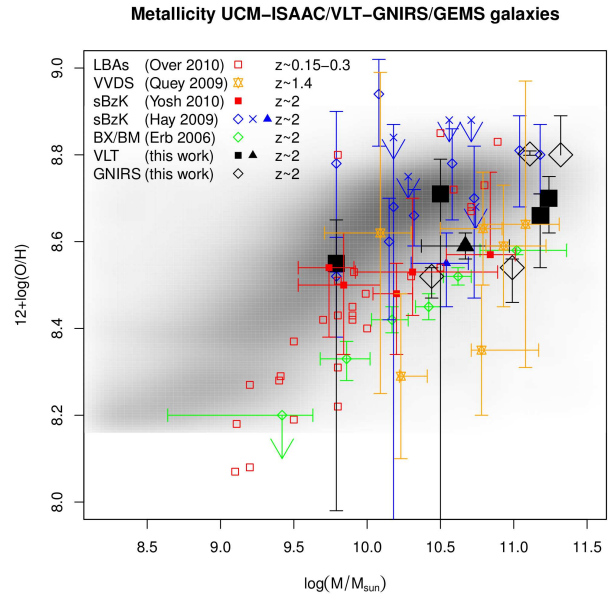


Fig. 1. Metallicity distribution of our data compare to SDSS (Tremonti et al. 2004) in grey scale and other data of the literature. The black square represent individual galaxies and the black triangle represent a bin of galaxies.

All this values are compatible with local metallicities as show Mannucci et al. (2010). Our sample has metal rich galaxies with a high stellar mass. This suggests that massive galaxies have evolved at this redshift.

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