

## Spectroscopic pilot study in the near infrared of a sample of star-forming galaxies at $z \sim 2$

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### Abstract

In this work we present the results of the spectroscopic analysis in the near-infrared  $K$  band of a sample of 12 active star forming galaxies at  $z \sim 2$ . The sample was selected by using photometric redshifts, blue colors and large fluxes in the  $24\ \mu\text{m}$  band of MIPS/Spitzer. To analyze their physical properties we have computed their sizes, colors, stellar masses, extinctions and other parameters available in literature and in the Rainbow database. We compute  $\text{H}\alpha$  luminosities and star formation rates for all galaxies at that redshift. We were able to estimate metallicities from  $[\text{NII}]\lambda 6584$  for a sub sample of the objects. In particular the dependence of the metallicity with the stellar mass has been studied and compared with the results of other samples of galaxies at several redshifts. For a fixed mass, the metallicities of our galaxies are compatible than those similar at the corresponding redshift, following the general trend of lower metallicities for higher redshifts.

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