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## Investigating the properties of a galaxy group at $z = 0.60$

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How large scale structure in the Universe has formed and evolved remains as one of the most contested topics in Astrophysics nowadays. Characterizing the mass distribution of structures across the full mass range, from individual galaxies to galaxy clusters, can be used to test and constrain the model of structure formation and evolution. Galaxy groups bridge the gap between individual galaxies and galaxy clusters, so they offer a new window of investigation in the mass spectrum. Galaxy groups are the most common structures in the Universe, hosting at least half of all galaxies in the local Universe. Furthermore, they are great laboratories to study the impact of the environment in the galaxy evolution. So far, few studies have been done to measure the mass distribution of groups.

The main objective of this project is to investigate a galaxy group which is gravitationally lensing HELMS18, a submillimeter galaxy at redshift  $z = 2.39$ . Optical and near-infrared data from this galaxy group were obtained by the SDSS and UKIDSS surveys, indicating that the group is at  $z = 0.60$  and it has two central galaxies, an elliptical galaxy and a quasar. Recently, multi-object spectroscopy data were obtained for this galaxy group with Gemini GMOS instrument. With these data, we intend to investigate the stellar kinematics of the central galaxies, determine the members of the group and obtain the mass, the radius and the numerical density profile of this group.

In this work we will present the results of the reduction of multi-object spectroscopy data obtained with the Gemini telescope, which was done following the standard data reduction pipeline of GMOS. We will present preliminary results of measurements of the redshifts of the galaxies observed in the GMOS field.