

## **Structural Evolution of $H\alpha$ selected galaxies from HiZELS**

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### **Abstract**

Understanding the evolution of galaxies across cosmic time is the cornerstone of modern extragalactic astrophysics and, as new and revolutionary instruments and surveys become available, many questions that have so far been unanswered can finally be tackled.

Using  $H\alpha$  narrow-band imaging over very large areas through the HiZELS survey, we have obtained samples of thousands of galaxies selected in a consistent way since  $z \sim 2.5$  until today. A sub-sample is currently being observed with SINFONI and KMOS to provide spatially resolved spectral information of these targets. This allows for the mapping of the galactic properties namely dynamics, star formation and metallicities on a few kilo parsecs scale for hundreds of galaxies.

Here we present the detailed structural analysis of both KMOS followed-up galaxies, but also the more general parent samples and on a local sample observed with CALIFA by running GALFIT (Peng et al., 2002, 2010). We compare their morphological information (size, Sérsic index, ellipticity) with the available  $H\alpha$  maps and explore correlations with related quantities such as SFR, stellar mass and rest-frame colours. We finish by presenting the little evolution in most correlations, apart from those that directly depend on SFR.