

Star formation enhancement characteristics in interacting galaxies

J. Zaragoza-Cardiel^{1,2}, J. E. Beckman^{1,2,3}, J. Font^{1,2},
 A. Camps-Fariña^{1,2}, B. García-Lorenzo^{1,2} and S. Erroz-Ferrer^{1,2}

¹Instituto de Astrofísica de Canarias, C/ Vía Láctea s/n, 38205 La Laguna, Tenerife, Spain
 email: jzc@iac.es

²Department of Astrophysics, University of La Laguna, E-38200 La Laguna, Tenerife, Spain
³CSIC, 28006 Madrid, Spain

Abstract. We have observed 12 interacting galaxies using the Fabry-Perot interferometer GHαFaS (Galaxy Hα Fabry-Perot system) on the 4.2m William Herschel Telescope (La Palma). We have extracted the physical properties (sizes, Hα luminosity and velocity dispersion) of 236 HII regions for the full sample of interacting galaxies. We have derived the physical properties of 664 HII regions for a sample of 28 isolated galaxies observed with the same instrument in order to compare both populations of HII regions, finding that there are brighter and denser star forming regions in the interacting galaxies compared with the isolated galaxies sample.

Keywords. galaxias: interactions – galaxies: kinematics and dynamics – stars: formation

The study of galaxy interactions kinematics, and comparison with the properties of the star forming regions reveals two populations of HII regions in Arp 270 (Zaragoza-Cardiel *et al.* 2013), and of HII regions and GMCs in the Antennae galaxies (Zaragoza-Cardiel *et al.* 2014). We compare a sample of 12 interacting galaxies with 28 isolated galaxies in order to understand the role played by the interaction in star formation enhancement. We see in Figure 1 (left) that the luminosity-radius relation for the brightest HII regions in interacting galaxies has a steeper slope than that for isolated galaxies. In Figure 1 (right) we see that the luminosity functions are different in the high luminosity range.

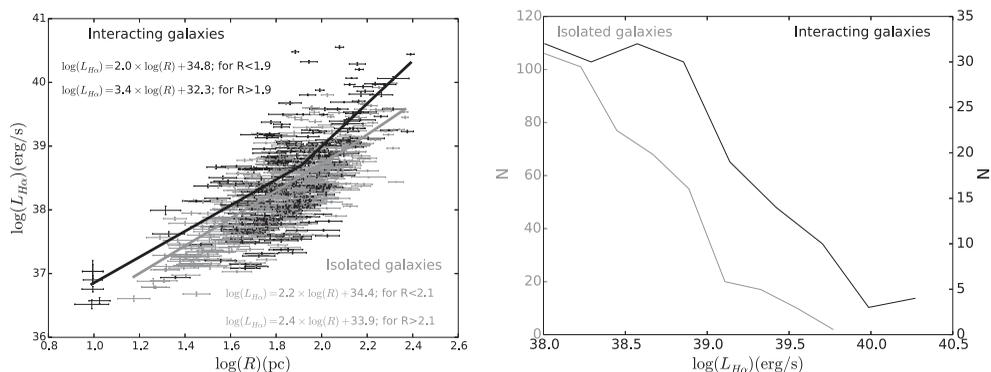


Figure 1. Left: $L_{H\alpha}$ versus R (size). Right: Luminosity function of the HII regions.

References

- Zaragoza-Cardiel, J., Font-Serra, J., Beckman, J. E., *et al.* 2013, *MNRAS*, 432, 998
 Zaragoza-Cardiel, J., Font, J., Beckman, J. E., *et al.* 2014, arXiv:1409.1251