**INTRODUCTION**

HII galaxies are very “blobby” (Telles & Sampson 2001), and the overall motions of a messy ISM is dominated by the central (core) brightest knot of star formation constituted by an ensemble of Super Star Clusters (Telles, Muñoz-Tuñón & Tenorio-Tagle 2001), possibly sitting at the bottom of the galaxy gravitational potential well. In fact, all HII galaxies have an underlying galaxy with a history of star formation where most of the stellar mass was formed long ago (> 5 Gyrs) (Westera et al. 2004).

The physical properties found in HII galaxies has profound implications on several topics (see the schematic figure aside). In particular on issues such as star potential well. In fact, all HII galaxies have an underlying galaxy with a history of their gravitational origin (Telles & Terlevich 1993). A fine calibration of these relations for local HII galaxies can be important if used as distance indicator for high redshift galaxies since HII galaxies are easy to find at great distances (Melnick, Terlevich & Terlevich 2000).

We have investigated the [L – σ] relation for a homogeneous sample of about one hundred local HII galaxies (z < 0.1), using accurate line widths from high resolution spectra from FEROS on the 1.52m ESO at La Silla, and spectrophotometry from our new uniform observations given by Kehrig, Telles & Cuisinier (2004).

**CONCLUSIONS**

HII galaxies when observed spectroscopically in high resolution show different features in their emission lines profiles. These profiles reflect the internal kinematics and can introduce a natural scatter in [L – σ] relation. Gaussian line profiles seem to be common in most HII galaxies, particularly among the more regular galaxies, classified morphologically as Type II in Telles, Melnick & Terlevich (1997).

We have found that EW(Hβ) is a possible second parameter in [L – σ] relation, an indication that this relation is sensitive to the evolutionary state. There is no advantage in using metallicity (O/H) as a second parameter instead of EW(Hβ). Our PCA results indicate that EW(Hβ) contributes more to the variance than O/H.

A full analysis of this study and implications for their use as mass estimators or distance indicators will be presented in a forthcoming paper.

**References:**


Kehrig, C., Telles, E., Cuisinier, F., 2004, Ast. 128, 1141


Smoker, J. V., Davies, R. D., Assan, D.J. & Hummel, E., Astr. 36, 19


