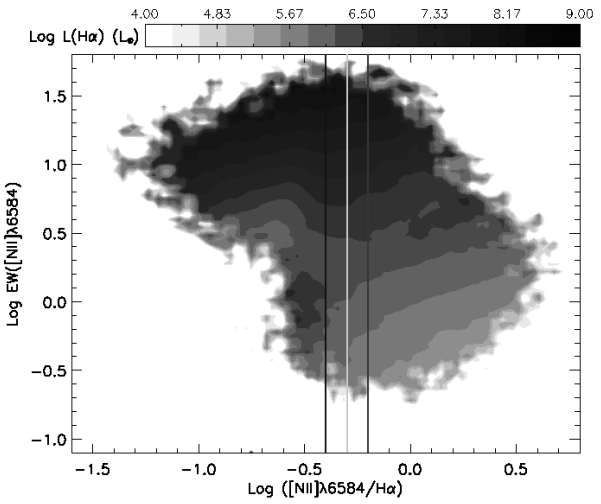

Fig. 1. Contour of luminosity of Hα, the solid line at -0.3 separate SFGs from TO, and -0.4 and -0.1 define de buffer zone where find the TO's.

3. LUMINOSITY

A very high fraction (62.3%) of the galaxies without [OIII] fall on the AGN side of the NII diagram (to the right of continuous line at -0.3 in [NII]/Hα). The galaxies without Hβ fall mostly (93%) on the AGN side. The distribution of the galaxies without both lines seems similar to that of the galaxies without Hβ: 91% are on the AGN side. Most of the galaxies with some emission lines missing fall below log(EW[NII]) = 0.6: 77% without [OIII], 94% without Hβ and 98% without both lines. Their median luminosity on this region in Hα is 5.6×10^{39} erg s^{-1}, which justify the LLAGNs classification. In Figure 1 we can see this decrease in luminosity.

4. FWHM OF Hα

These galaxies show broad FWHM typical of AGNs plus extra nuclear excitation compared to SFGs. Another characteristics of AGNs is their relatively broad line profiles compared to SFGs. Typical FWHM in AGNs range between 170 and 700 km s^{-1}. Such broad lines cannot be explained by thermal motion. It suggests the gas producing the emission is moving at high speed. The values were quadratically corrected for the resolution of the telescope (follow Greene & Ho 2006). One can see how the FWHM increases from the SFGs to the TOs to the AGNs. In Figure 2 we can see the histogram of FWHM of Hα.

5. DISCUSSION

Based on a large sample of emission line galaxies from SDSS, we have shown that the galaxies

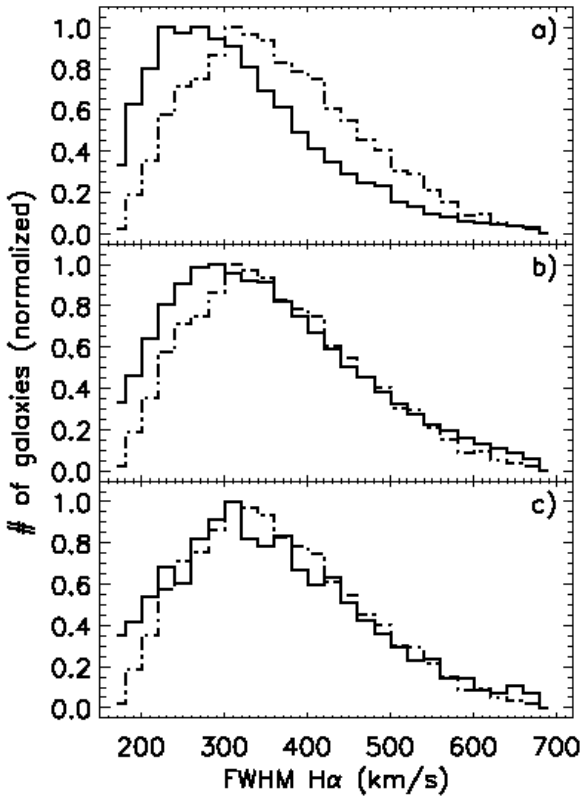

Fig. 2. Distributions of the FWHM of Hα: (a) galaxies without [OIII]; (b) galaxies without Hβ; (c) galaxies with both lines missing. The point dashed line corresponds to the standard AGNs.

that cannot be classified because some important emission lines are missing are in majority LLAGNs. Therefore this characteristics seems to be the signature of LLAGNs in the nearby universe (Coziol et al. 1998).

REFERENCES

Adelman-McCarthy, J. K., et al. 2007, ApJS, 172, 634
Baldwin, J. A., Phillips, M. M., & Terlevich, R. 1981, PASP, 93, 5
Cid Fernandes, R., Mateus, A., Sodré, L., Stasińska, G., & Gomes, J. M. 2005, MNRAS, 348, 363
Coziol, R., Ribeiro, A. L. B., de Carvalho, R. R., & Capelato, H. V. 1998, ApJ, 493, 563
Greene, J. E., & Ho, L. C. 2006, ApJ, 641, 117
Kauffmann, G., et al. 2003, MNRAS, 346, 1055
Kewley, L. J., et al. 2001, ApJ, 556, 121
Martínez, M.A., del Olmo, A., Coziol, R., & Focardi, P. 2008, ApJ, 678, L9
Martínez, M. A., del Olmo, A., Coziol, R., & Perea, J. 2010, AJ, 139, 1199
Phillips, M. M., Jenkins, C. R., Dopita, M. A., Sadler, E. M., & Binette, L. 1986, AJ, 91, 1062
Veilleux, S., & Osterbrock, D. E. 1987, ApJS, 63, 295