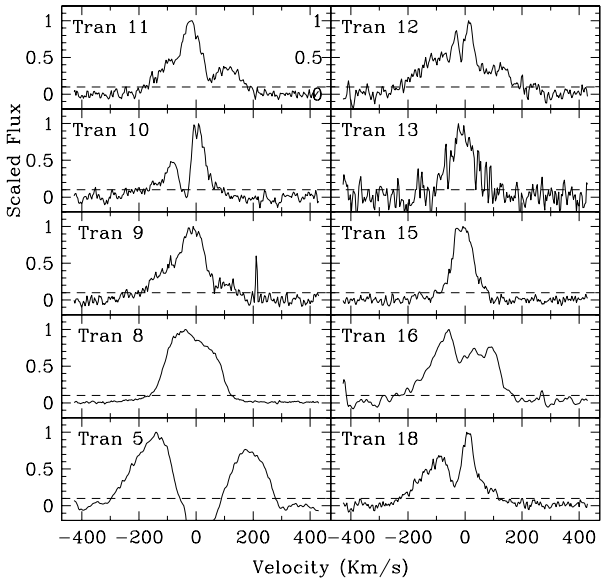

Fig. 1. The Hα velocity normalized profiles of the accreting objects in our sample. The dashed line indicates the 10% peak intensity, where ΔV is measured. They all have $\Delta V > 200$ km s^{-1}.

locity dispersion of the Hα line using echelle spectroscopy: Clay/Mike, Du Pont/echelle), and multiplicity information (from Adaptive Optics imaging VLT/NaCo) during different observing runs.

3. RESULTS

Based on a multiwavelength analysis, we can summarize the first results from the Adaptive Optics, submillimeter, and first-epoch echelle spectroscopy observations, as follows:

(1) The derived spectral classification indicated that most of the systems are M-type stars, in agreement with previous results concerning to the population of Lupus (Comerón 2008).

(2) 50% targets are accreting objects (i.e., have a velocity width >200 km s^{-1} at 10% of peak intensity of Hα profile, see Figure 1). This information allows to estimate the accretion rates.

(3) ∼50% of the sample are multiple systems among them three triple systems with an unresolved close binary component. These systems are candidates to have a circumbinary disk.

(4) 40% targets have flux detection at submillimeter, for the remaining systems we derive and upper limit of the disk mass (corresponding to a flux of 3 × RMS).

Combining disk masses, accretion rates and multiplicity data with other information, such as SED morphology and fractional disk luminosity ($L_{\rm DISK}/L_*$), allows to classify the disks as strong candidates for the following categories:
(a) 25% Grain growth-dominated disks (accreting objects with negative SED slopes in the mid-IR).
(b) 15% Photoevaporating disks (non-accreting objects with disk mass $< 2.5\ M_{\rm JUP}$, but $L_{\rm DISK}/L_* > 10^{-3}$).
(c) 35% Debris disks (non-accreting objects with disk mass $< 2.5\ M_{\rm JUP}$ and $L_{\rm DISK}/L_* < 10^{-3}$).
(d) 15% Circumbinary disks (a binary tight enough to accommodate both components within the inner hole).

The most remarkable result is that one target shows strong evidence for ongoing giant planet formation (accreting object with positive SED slopes in the mid-IR and no close stellar companion) to be followed-up with Herschel and ALMA.

The comprehensive explanation of the used method and the complete analysis to characterize the sample can be found in Romero, G. A., Schreiber, M., Cieza, L., et al., in preparation.

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REFERENCES

Andrews, S. M., & Williams, J. P. 2005, ApJ, 631, 1134
Cieza, L., et al. 2007, ApJ, 667, 308
Comerón, F. 2008, in Handbook of Star Forming Regions Vol. II, The Southern Sky, ed. B. Reipurth (San Francisco: ASP), 295
Evans, N. J., II, et al. 2003, PASP, 115, 965
Hughes, J., Hartigan, P., Krautter, J., & Kelemen, J. 1994, AJ, 108, 1071
Wolk, S. J., & Walter, F. M. 1996, AJ, 111, 2066