

YSOs in Taurus-Auriga-Perseus and Orion

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Abstract. Physical parameters were derived for 100 young stellar objects in the TAPO region.

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We made an analysis of 4441 AKARI FIS (Kawada *et al.* 2007; Yamamura *et al.* 2010) point sources in the Tau-Aur-Per and Orion region. Spectral energy distribution (SED) was drawn for about 550 point sources based on AKARI FIS, AKARI IRC (Ishihara *et al.* 2010), Spitzer Space Telescope (SST, Werner *et al.* 2004) Infrared Array Camera (IRAC; Fazio *et al.* 2004), Mid-Infrared Photometer for Spitzer (MIPS; Rieke *et al.* 2004), 2 Micron All Sky Survey (Skrutskie *et al.* 2006) and Wide-Field Infrared Survey Explorer (WISE, Wright *et al.* 2010) and various other photometric data. We determined the physical parameters (e.g. stellar mass, temperature and radius, disk size and mass) of 100 YSOs with the SED Fitting Tool of Robitaille *et al.* 2007 and for other 450 sources we determined an evolutionary stage based on the slope of the SED in mid-IR and FIR.

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References

- Ishihara, D., Onaka, T., Kataza, H. *et al.* 2010, *A&A*, 514, 1
Fazio, G. G., Hora, J. L., Allen, L. E. *et al.* 2004, *ApJS*, 154, 10
Rieke, G. H., Young, E. T., Engelbracht, C. W. *et al.* 2004, *ApJS*, 154, 25
Kawada, M., Baba, H., Barthel, P. D., Clements, D. *et al.* 2007, *PASJ*, 59, 389
Robitaille, T. P., Whitney, B. A., Indebetouw, R., & Wood, K. 2007, *ApJS*, 169, 328
Skrutskie, M. F., Cutri, R. M., Stiening, R. *et al.* 2006, *AJ*, 131, 1163
Yamamura, I. *et al.* 2010, *AKARI/FIS Bright Source Catalogue Version 1.0 Release Note*
Werner, M. W., Roellig, T. L., Low, F. J. *et al.* 2004, *ApJS*, 154, 1
Wright, E. L., Eisenhardt, P. R. M., Mainzer, A. K. *et al.* 2010, *AJ*, 140, 1868