Study of the circumstellar environment of intermediate mass young star 51 Oph

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Abstract

51 Oph is a peculiar intermediate mass young stellar object that its evolutional status is not well-known yet. This object has already been observed by Jamialahmadi et al. in the visible domain using the VEGA instrument installed on the CHARA array. In this study, they used a toy model and concluded that from the visible point of view, 51 Oph presents all the features of a classical Be star: near critical-rotation and double-peaked Hα line in emission produced in a gaseous disk in Keplerian rotation. However, this does not explain the presence of dust as seen in the mid-infrared and millimeter spectra, and the evolutionary status of 51 Oph remains unsettled. In order to better understand the evolutionary stage of this star and the connection between the star and the gaseous disk plus the inner rim of the dust disk, we plan to use a radiative transfer code called HDUST. With this code, for the first time, we try to interpret the recent PIONIER data at H band and the VEGA data at visible, and study simultanesouly the dust and the gas surrounding this star.

Keywords: Protoplanetary disks

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