

The circumstellar environment of MWC297: ISO results and FIRST expectations.

M. Benedettini, S. Pezzuto,
CNR-Istituto di Fisica dello Spazio Interplanetario, Area di Ricerca di Tor Vergata,
via Fosso del Cavaliere 100, 00133 Roma, Italy, milena@ifsi.rm.cnr.it

T. Giannini, D. Lorenzetti, B. Nisini,
Osservatorio Astronomico di Roma, via Frascati 33, 00040 Monteporzio Catone, Italy

The ISO SWS and LWS full grating spectra of the Herbig Ae/Be star MWC297 are presented. The spectra are dominated by a strong continuum; in addition in the SWS range (2.3-45 μ m) emission lines from the HI recombination series, PAH emissions and absorptions by solid CO₂, H₂O, and silicates have been observed while in the LWS spectrum (45-200 μ m) [OI] and [CII] fine structure lines have been detected.

The NIR-FIR data have been combined with ground based photometry to derive the spectral energy distribution (SED) from optical to radio wavelengths. The observed SED has been compared with the SED's computed with a spherical dusty envelope model parametrized by a density and temperature law in order to derive the spectral type, the A_v and the distance. Consistent determination of the extinction plus estimations of the source mass loss rate and the dimension of the emitting ionized region have been derived by the analysis of the HI recombination lines of the Brackett, Pfund and Humphreys series observed by ISO together with Paschen, Brackett lines observed from ground.

The results are somewhat hampered by the (partly for SWS) large beam size of the ISO instruments. We then will show how the large spatial resolution of PACS can be used to improve our understanding of the physical conditions in the close neighborhood of MWC 297 and, more general, to shed light on the unsolved problems regarding the circumstellar environment around the Herbig Ae/Be stars.