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A far-infrared catalogue of dense cores and protostars in the Lupus complex

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I will present the catalogues of the dense cores and YSOs/protostars of the Lupus I, III, and IV molecular clouds, compiled with compact sources extracted from the five Herschel photometric maps between 70 and 500 micron. The physical properties of the detected objects were derived by fitting their spectral energy distributions. For YSOs/protostars a wide SED was built by complementing the Herschel data with mid- and near-infrared fluxes.

A total of 532 dense cores, out of which 103 are presumably prestellar in nature, and 38 YSOs/protostars have been detected in the three clouds. Almost all the prestellar cores are associated to filaments but only about one third of the starless cores and protostars. Prestellar core candidates are found even in filaments that are on average thermally subcritical and over a background column density lower than that measured in other regions so far. The evolutionary status of the YSOs and protostars were estimated using two indicators: the spectral index between 2.2 and 24 micron and the fitting of the spectral energy distribution from near- to far-infrared wavelengths. For most of the objects, the evolutionary stage derived with the two methods are in agreement.

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