Star formation in clusters: from ISO to FIRST

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The gain in imaging capability and spectral resolution of FIRST, compared to ISO, will result in a substantial progress for the study of star formation and, in particular, of star formation in clusters.

FIRST, with its relatively high spatial resolution at the frequency where protostars peak, will be the best available tool for detecting and studying young clusters and proto-clusters with a sensitivity 2 orders of magnitude better than present ground based facilities.

The spectroscopic imaging capability of FIRST will give a full spectrum for each spatially resolved element in a F.O.V. of several arcmin, tracing temperature, densitiy and chemical composition of the interstellar gas. Moreover, the high resolution spectroscopy will study the dynamics. These observations will allow to study the physical processes going on (outflows, shocks, ionising fields,…) and trace in the interstellar gas the interactions among the members of a cluster.