

Abstract:

Understanding the early stages of star formation is a research field of ongoing development, both theoretically and observationally. In this context, molecular data have been continuously providing observational constraints. Molecules are indeed ideal probes to investigate the dynamic properties of the interstellar medium, and can help us cast light on the different phases of the low-mass star formation process. In this talk, I will speak about two of my ongoing projects in the field. The first one concerns the kinematic analysis of the protostellar clump Barnard 59, in the Pipe Nebula, using ammonia spectroscopic data. Subsequently, I will illustrate the study of nitrogen fractionation in the prestellar core L183, briefly introducing what this chemical process is and why it is important within the star formation context.