

Invited: Massive star cluster formation: the role of the magnetic field and the environment

- Gemma Busquet

Most stars, including our Sun, form in clusters embedded within molecular clouds. It is then important to characterize their formation in dense environments and to assess whether the environments play a role in the subsequent evolution. I will present results from two well studied high-mass star-forming regions, the infrared dark cloud G14.225-0.506 that consists of two hubs with different level of fragmentation, and IRAS 18162-2048, a massive B0-type young stellar object that powers a long, fast, and highly collimated jet. I will discuss the main physical properties controlling the fragmentation process focusing on the role of the magnetic field in regulating the collapse from large to small scales. Finally, I will present ALMA observations at 1.1 mm with an angular resolution of 40 mas (or 70 au at the source distance). I will show the physical parameters of the disk population in the context of massive star cluster formation.

Molecular Clouds