Contribution ID: **55** Type: **not specified**

The early stages at substellar formation in Lupus 1 and 3 clouds

Tuesday, 15 October 2019 18:35 (15 minutes)

Contributed talk

Abstract:
"The formation of brown dwarfs is still under debate. While the latest discoveries point towards a scaled-down version of the star formation process, other models, such as embryo ejection or stellar disk fragmentation, may not be discarded. Here we present our latest ALMA cycle 3 (band 6) continuum observations of Lupus 1 and 3 star formation regions based on previous ASTE/AzTEC observations and a set of previously known class II substellar objects from the literature. We classify these sources using the spectral energy distribution obtained from archival data. We report nine new sources that could be classified as either prestellar cores or deeply embedded protostar candidates, three new class I objects, and one new class II. Additionally we also detected six previously known class II systems, some of them in the boundary between brown dwars and very low mass stars. We probe the turbulent fragmentation and core collapse formation scenarios for the prestellar cores or deeply embedded protostar candidates and we compare the dust masses of the disk for the class II objects with previous studies. We also present ALMA cycle 5 band 7 data of Par-Lup3-4 where we witness for first time the presence of the base of a compact bipolar molecular cavity in radio and an optical jet in a very low mass star, close to the boundary to brown dwarfs, suggesting a scale down version of low mass star formation."

Presenter: Dr SANTAMARÍA-MIRANDA, Alejandro

Session Classification: ISM, SF