Contribution ID: **42** Type: **Contributed talk**

The formation of free-floating planets: lessons from proto-brown dwarf studies in nearby clouds

Monday, December 15, 2025 10:20 AM (20 minutes)

In a recent review paper, we have studied the pre- and proto-brown dwarf (proto-BD) population in different nearby clouds down to the planetary boundary (Palau+2024). Among our findings, we confirm that massive proto-BDs seem to follow the same trends as protostars in different star forming regions. On the other hand, we report an underproduction of low-mass proto-BD candidates in Ophiuchus compared to Lupus or Taurus, suggesting a possible influence of the cloud temperature in their formation due to the presence of hot stars. Hence, in this presentation I will discuss the possibility that the planetary-mass regime of the IMF, where rogue planets reside, is subtly shaped by stellar feedback. Our overall results suggests that Jeans fragmentation seem the main mechanism to form objects down to 10 M_{Jup}, below which other mechanisms might be at work.

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Session Classification: Direct Imaging

Track Classification: In-person