

Jeudi 19 septembre 2024 à 11h (IAS, bâtiment 121, salle 1-2-3)

Do we understand the fundamentals of star formation?

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Star formation is a key step in the history of our Universe. Indeed stars are truly its building block. Not only they synthesize the heavy elements but also they emit light and inject kinetic energy in the interstellar medium through the various feedback processes such as supernovae, stellar winds or jets. Last but not least stars host planets. Due to its multi-scale and multi-physics nature, understanding star formation remains a formidable challenge. However thanks to the recent progresses made both on the observational and computational sides, much has been accomplished during the last years. In the talk I will focus on three fundamental questions, the star formation rate, the initial mass function on the protoplanetary disk formations. I will present both complex numerical simulations but also simple analytical models as they lead to complementary views. I will also discuss how these theoretical models compare with observations.