

How stellar flybys shape planet-forming discs

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Abstract: Stellar encounters between young stars – also called stellar flybys – deeply affect protoplanetary disc evolution in crowded environments. This very fact has profound implications for planet formation, which remain poorly or partially understood. In this context, it is particularly relevant to explore how such encounters modify protoplanetary disc dynamics. Here, I will review what are the main dynamical consequences of flybys: disc warping, disc capture, spiral formation, heating and accretion events. Then, we will explore some recent observations of stellar systems where ongoing flybys are suspected: UX Tauri, Z CMa, and FU Ori. For the latter, we will analyse how the flyby orbit is deeply connected to the induced accretion event and also the extreme heating of the dust particles within the disc. Finally, we will discuss the implications of stellar flybys at a more general level.