

Simulating the formation of binary stars

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I present theoretical work done using the AMR MHD code FLASH on the formation of binary stars and the evolution of their discs in these systems. I simulated the collapse of molecular cores until the formation of protostars and followed the early evolution of these systems. I investigated the influence that binarity has on the global evolution of a young stellar system, including looking at mechanisms such as accretion of material, jets and outflows, and dynamical interactions. I find that while in some scenarios binary stars may produce hostile environments for planet formation via the destruction of circumstellar discs, the formation of large circumbinary discs is possible. This can lead to the formation of planets around binary stars to be just as likely as the their formation around single stars. I also present preliminary results on the influence of eccentricity on episodic accretion, independent of separation.

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