

Binaries: the key to understanding star formation?

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The overall fraction of stars that form in binaries, and the orbital properties of these systems, are potentially a very strong constraint on the star formation process. However, whilst the binary properties of Galactic field stars and brown dwarfs are well known, in nearby star-forming (SF) regions the observations are often limited to a comparatively narrow semi-major axis range. Furthermore, dynamical interactions in SF regions are thought to lower the primordial binary fraction and alter the initial companion mass ratio and semi major axis distributions.

In this contribution I demonstrate that the companion mass ratio distribution is not altered by dynamics, and is therefore a strong tracer of the star formation process. Furthermore, if observations of binaries in the field are complete, then dynamical interactions cannot destroy a significant fraction of these systems and so field binaries can be thought of as 'fossils' of the SF process. However, I show that the binaries we can currently observe in SF regions are most susceptible to stochastic destruction and further observations would be highly desirable in order to constrain the type(s) of star formation event that contribute to the Galactic field.