R23a Evolution of the mass-function of stars in globular clusters

○ Holger Baumgardt(東大天文)

We report first results of collisional N-body simulations, aimed to study the evolution of the mass-function of stars in globular clusters. It is important to understand this change, since one can observe only the present mass-function of stars, and has to deduce the much more interesting initial mass-function (IMF) by theory. Our clusters start with a power-law or a Kroupa (2001) IMF and we study the evolution of the mass-function under the combined influence of stellar evolution, dynamical relaxation and tidal effects from the parent galaxy.

We find that low-mass stars are preferentially lost from the clusters and to such an extent that the mass-functions turn into bell-shaped curves at very late stages. Different inital mass-functions lead to differences at later stages, giving the possibility to deduce the IMF from observations.