

From star clusters to field populations: survived, destroyed and migrated clusters



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The longevity of the oldest open clusters

Open clusters' dynamical evolution is driven by stellar evolution, internal dynamics and external forces, which according to dynamical simulations, will evaporate them in a timescale of about 1 Gyr. However, about 10% of the known open clusters are older. They are special systems whose detailed properties are related to the dynamical evolution of clusters and the balance between mechanisms of cluster formation and dissolution. In this talk, I will present the results of our study of the spatial distribution and structural parameters of six of the oldest open clusters in the Milky Way in order to constraint their dynamical evolution and longevity. Moreover, I will discuss how the ongoing and forthcoming Galactic spectroscopic surveys such as WEAVE or 4MOST will contribute to study the internal kinematics of open clusters, and in particular, the oldest ones with the final goal of understanding the reasons of their longevity.

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