

## **The bi-modal formation of massive star clusters**

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The formation of massive clusters is less clear than that of their lower-mass counterparts. The reason is that there are few nearby massive star-forming regions and the formation phase is presumably very short. Perhaps surprisingly, young massive clusters exist on the one hand as very compact systems, but as well as quite extended entities often referred to as associations.

Once formed massive clusters develop in a highly deterministic way. Both types of clusters expand considerably during the first 10 Myr after their formation. This cluster expansion is the key to the determining the star formation efficiency and star formation history for both types of clusters. It turns out that the star formation efficiency in the associations is of the order of 30% whereas that of compact clusters much higher (~60-70%). The cause of expansions differs as well in the two types of clusters - in the massive associations it is driven by gas expulsion, whereas in compact clusters encounters in the very dense central cluster area are the underlying cause.

We discuss the possible scenarios that could lead to the formation of such different massive star clusters. It is demonstrated that this bimodal behaviour is not unique to the young massive clusters in the Milky Way clusters, but is similar in the Local Group.