

# The Physics of Star Cluster Formation and Evolution

Krause M.G.H.

Offner S.S.R.

Charbonnel C.

Gieles M.

Klessen R.S.

Vázquez-Semadeni E.

Ballesteros-Paredes J.

Girichidis P.

Diederik Kruijssen J.M.

Ward J.L.

Zinnecker H.

Star clusters form in dense, hierarchically collapsing gas clouds. Bulk kinetic energy is transformed to turbulence with stars forming from cores fed by filaments. In the most compact regions, stellar feedback is least effective in removing the gas and stars may form very efficiently. These are also the regions where, in high-mass clusters, ejecta from some kind of high-mass stars are effectively captured during the formation phase of some of the low mass stars and channeled into the latter to form multiple populations. Star formation epochs in star clusters are generally set by gas flows that determine the abundance of gas in the cluster. We argue that there is likely only one star formation epoch after which clusters remain essentially clear of gas by cluster winds. Collisional dynamics is important in this phase leading to core collapse, expansion and eventual dispersion of every cluster.

We review recent developments in the field with a focus on theoretical work. © 2020, Springer

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