

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



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Open cluster mass functions and tidal masses from Gaia DR3

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Accurate mass determinations for open clusters (OCs) are essential for studying star formation as well as OC dissolution processes. Using the Gaia DR3 OC catalogue of Hunt & Reffert (2023), we construct an extensive sample of OC mass estimates. We analyze more than 2000 OCs within 2 kpc, estimating their tidal masses and fitting their mass functions where possible (including the effect of unresolved binaries). Our analysis is in general agreement with previous Gaia studies of smaller samples, and indicates that the mass function break shifts towards higher masses as the cluster ages. We also show that the complex selection function of the Gaia DR3 OC census is the main missing ingredient for tighter measurements of the cluster formation and destruction rates in the solar vicinity.

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