A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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The role of cluster age on the onset of multiple populations in stellar clusters

Martocchia Silvia, ESO

It is now well established that globular clusters (GCs) host unusual chemical patterns in the form of star-to-star abundance variations in light elements. However, the origin of such multiple stellar populations (MPs) is still far from being understood. To this purpose, we have undertaken an HST photometric survey of 13 star clusters in the Magellanic Clouds with masses comparable to that of old GCs where MPs have been identified, but with significantly younger ages (1.5 - 11 Gyr). We found that the extent of MPs are a strong function of age, with older clusters having more extreme populations. Another surprising result is that we find MPs down to $\sim$2 Gyr old clusters for the first time. This is fundamental as it shows that the formation of MPs is not restricted only to the early Universe, but it continued down to a redshift of at least z=0.17. This provides another strong link between young massive clusters and the ancient globular clusters, suggesting a common formation/evolution mechanism. The results presented here represent fundamental constraints for the origin of MPs and might point towards a new and fresh direction into the onset of this complex phenomenon.