E-MOSAICS: EAGLE – MOdelling Star Cluster System Assembly in Cosmological Simulations

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We present E-MOSAICS: a suite of cosmological, hydrodynamical simulations run with the model for the EAGLE project (Schaye et al. 2015) which includes a semi-analytic model for star cluster formation and evolution (Kruijssen et al. 2011, 2012). This work is the first to self-consistently model the formation and evolution of star clusters through cosmic history in fully cosmological, hydrodynamical simulations of galaxy formation. The formation of clusters is directly linked with the interstellar medium at the time of formation and their subsequent evolution (and dissolution) is calculated in a sub-grid manner using the evolving local tidal field of each ‘cluster particle’.

Figure 1: Zoom-in simulation of a Milky Way-like galaxy and its star cluster population. The grey scale shows the gas surface density and coloured points show star cluster metallicity, with point area proportional to cluster mass.

References: