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Diego Capozzi

John Moores University, Liverpool

The build-up of the colour-magnitude relation in low redshift galaxy clusters

It is still unclear how galaxies evolve over the Hubble time and the picture is complicated because galaxy properties also depend on environment and mass. An excellent probe of this evolution is the colour-magnitude relation (CMR) for early-type galaxies in clusters and groups. We have studied the CMR in the low-redshift domain ($0.05 < z < 0.26$), using data from Sloan Digital Sky Survey (SDSS) DR6. We performed our study on optically and X-ray selected cluster samples. The former contains 490 clusters selected from ~ 400 deg² of early SDSS commissioning data, while the latter consists of 97 clusters included in the XMM Cluster Survey (XCS). For both of them we observed a decrease of the g/d ratio with redshift. Our results, obtained in the poorly studied low-redshift domain, are consistent with the trend found by De Lucia et al., covering the intermediate-redshift domain (0.4-0.8). The dependence of the g/d ratio with X-ray luminosity (therefore mass) has been investigated as well, but no trends are seen. The implications on evolution and the differences between the X-ray and optically selected samples as well as those between the two identification algorithms used to build the latter, will be discussed.