

The role of environment in galaxy evolution as seen from the SERVS/DeepDrill survey

In order to study the role of local and large scale environment in the build-up and quenching of galaxies, we need surveys that are large enough to sample a representative cosmic volume as well as deep enough to cover the key epochs of this build-up. I present early results from a study of 2D density maps spanning $z \sim 0-2$ in nearly 9sq.deg. of the SERVS/DeepDrill survey. In this work we focus on areas with existing high quality ancillary data, including from the HSC-Deep survey and VIDEO which allows for robust photometric redshift and stellar population parameter determinations. We use a simulated lightcone to examine the reliability of 2D density map measures in the presence of photo-z uncertainties. This allows us to assign galaxies into high density, average and low density environments. We then examine trends in the relative numbers of blue star-forming, dusty star-forming, post-starburst and quiescent galaxies in bins of redshift, environment, and mass. We fold-in X-ray and radio data to examine the incidence of radiative and radio-mode AGN in the same bins. Lastly, I discuss future prospects including the PFS spectroscopic survey, and the LSST DeepDrill survey.