

Abstract

It is well known that in the local Universe high density regions are dominated by old early-type galaxies while low density regions are occupied by younger late-type galaxies. To identify the origin of such strong environmental dependence, we have to look back in time and see proto-clusters and explore directly what physical processes are acting on the progenitors of early-type galaxies in their formation phase. I will present the results of our recent efforts to understand when environmental quenching has played a major role in suppressing the efficient starbursting SFR that is observed in $z=2-3$ dusty protoclusters. In particular, I will focus on our new analysis of Herschel sources in CLASH clusters at $0.2 < z < 0.8$, including a study of gas masses and average gas depletion times in star-forming cluster galaxies with z .