

1) How long does star formation keeps going in cluster galaxies? And what is the regulation process ? Have we identified all the sources of feedback in our numerical recipes ?

2) What observations do we need to make in order to understand the mechanism(s) that shut down star formation in cluster cores between $z \sim 1-2$ (depending on cluster mass)

3) How will we observationally determine masses for clusters at $z > 1.5$?

4) Do we have the tools/methodologies to interpret (proto)clusters from different selection and across cosmic time? Are there observables (beyond a hot ICM) that allow us to cleanly identify protoclusters as distinct from clusters? Can we predict if/when a given protocluster will collapse and what its mass will be at $z=0$? what is a proto-cluster anyway ??

5) Do halo masses determine the destiny of galaxy properties ?