* Relevant Questions

Using disk particles:

1) What is the final stellar density profile ? Is it well fit by a sersic profile? Does it agree with the sersic profile for elliptical galaxies?

2) What is the role of "dry" galaxy mergers between spirals in the formation of elliptical galaxies?

3) What is the distribution of stellar particles from M31 vs the MW?  Are the profiles different?

4) Is the 3D distribution of stars spheroidal or better fit by ellipsoids?

if you want you could also add a kinematic component to your analysis.

* Proposal feedback

1) I’m not sure what you mean about the change in M/L ratio.   Do you mean the total dark matter mass vs stellar mass?   If so, you could do 2 things:

a) You can plot the resultant mass profiles to determine this (mass enclosed as a function of radius).

b) You could also apply the virial theorem to the remnant to see if you get the correct total mass. E.g. if you compute the average velocity dispersion (the standard deviation of the total velocity) and assume a spherical system, what total mass would you predict?  How does this compare to the total dark Matter + stellar mass you actually get out of the system?   We did this calculation in class for low mass galaxies.  Let me know if you don’t have the notes or have questions about this.

2)  For the initial profiles of the galaxies.  You can use the simulation data for snapshot 0 and compare it to the literature to see how well the simulation matches reality at the present time — there won’t be a simulated stellar halo to begin with (which is the Gilbert work).

3)  Exponential disks have sersic profiles with n = 1  (i think the 2-6 refers to the stellar halo, rather than the disk) .   You can check this by assuming a M/L ratio for the disk stars (like we did in one of the in class labs for the bulge profile).

* Relevant Papers

Barnes, J. E., Hernquist, L. E.,1992, ApJL, 30, 705

[Conselice+2014](http://adsabs.harvard.edu/abs/2014ARA%26A..52..291C)

[Gilbert 2012] Gilbert, K. M.,Guhathakurta, P., et al. 2012, ApJ, 760, 76

[Duc 2013] Duc, Pierre-Alain, et al. 2013, ASPC, 447

[Schodel 2014] Schodel, R., et al. 2014, AA 566, A47

[Querejeta 2015] Querejeta et al. 2015, AA, 573