ASTR400B Research Topic

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1 Research Topic

1. Topic: Galaxy Merger Sequence of MW and M31: Baryonic Evolution Through Close Encounters

   (a) How the dust density profile of the disk evolves over time (which may not be possible with this simulation). The question of whether star formation abruptly ends or is enhanced after a galaxy merger is interesting, and still seems to be contested (Pearson et. al. 2019). Can a sudden increase in density brought on by the merger be an indicator that new star formation could happen, or perhaps a rapid decrease in density due to material flung away by the merger helps to explain some observed/simulated abrupt quenching that takes place in mergers?

   I find this to be an interesting dilemma, but I don't know if the simulation can track dust separately, or only total disk matter/bulge matter. If this is the case, I can also study density distributions of the total disk material to see how they evolve with time, particularly as the merger becomes more and more elliptical.