**Question 4** : Given that M31 and the MW are about to merge, why is the iterative process to determine the COM is important?

**Solution** : In a galaxy majority of the stellar population is present in the disk, however, their might be a long tail of stars that are tidally ripped by other galaxies. These, contribute a significant shift to the COM of the system, and can give us wrong estimates about the COM. Now, when the galaxies are merging, we want a precise measurement of the COM position and velocity, so we want to exclude the tidally ripped stars. Iterative process helps us to achieve this, by only considering stars in a very concentrated region, for determining COM parameters.