Topic Chose

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B) Galactic thick disk stars are primarily from accreted satellite galaxies?

The thick disk was discovered first in external edge-on galaxies. It is a source of early kinematic and chemical evidence for a Galaxy's composition and thus is regarded as a very significant component for understanding Galaxy formation.However, its nature is still under dispute.

Various scenarios for the formation of this structure have been proposed, including:

(1) Thick disks come from the heating of the thin disk.

(2) Galactic thick disk stars are primarily from accreted satellite galaxies

(3) More energetic stars migrate outwards from the inner galaxy to form a thick disk at larger radii.

D) Halo mass is the main driver of galaxy evolution, and environment is secondary?

We choose this title because halo is mysterious for us, and more importantly, Professor Peng teaches us!

Halo mass can be connected with central mass, and the environment is mainly over density and group richness. The current controversy is that some people think low massive galaxies have young stellar populations, so halo mass is the main driver. While some other people think that the environment can be linked to satellite galaxies, so it is the main driver. Some people also think that environment is a one-time driver and environment is a continuous driver.

E) AGN feedback is the main process that keeps massive galaxies quenched?

Galaxies tend to evolve from spiral to elliptical structure via mergers. However, the current rate of galaxy mergers does not explain how star formation ceases in galaxies. Theories of galaxy evolution must therefore be able to explain how star formation turns off in galaxies. This phenomenon is called galaxy "quenching".

Stars form out of cold gas, so a galaxy is quenched when it has no more cold gas. However, it is thought that quenching occurs relatively quickly, which is much shorter than the time it would take for a galaxy to simply use up its reservoir of cold gas. Galaxy evolution models explain this by hypothesizing other physical mechanisms that remove or shut off the supply of cold gas in a galaxy. These mechanisms can be broadly classified into two categories:

(1) Preventive feedback mechanisms that stop cold gas from entering a galaxy.

(2) Ejective feedback mechanisms, including AGN feedback that remove gas so that it cannot form stars.