

Astrophysics Lunch Talk

Tuesday, May 2, 2017



Fantastic Clumps and Where to Find Them

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The tidal interaction between two colliding galaxies strongly affects their gas disks. In addition to the huge bursts of star formation generally associated with merging galaxies, the interaction also redistributes gas throughout the disks. Previous studies that have attempted to address this problem often assumed that the gaseous and stellar disks have the same underlying distribution (both in form and in radial extent). However, observations of isolated disks show that this is seldom the case (e.g., Broeils & Rhee 1997), and that in fact, most galaxies have nearly as much gas inside the stellar disk as they do outside.

In this talk, I will examine the effect of several parameters on the infall of material into the nuclei of interacting galaxies. These include the equation of state of the gas (e.g., quasi-adiabatic vs. isothermal), the presence of a bulge, the pericentric separation, fractional gas mass, and the magnitude of the smoothing parameter, ϵ . I have found that the inflow as a result of an encounter may be over-estimated in simulation due to the choice of αg , or the length scale of the gas disk. In addition, I have found that the canonical method for producing inflow (i.e., a bar) is difficult to recreate in high-gas content and high spatial resolution simulations.

I will discuss another method to deliver gas to the nucleus of an interacting galaxy: gaseous clumps.



Lunch talk at 1:45pm in CAS 500.

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Wednesday May 17
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