

High-redshift galaxies in the Illustris Simulation

Shy Genel¹

¹ *Columbia University*

Abstract

I will present results from the Illustris simulation, which is a large cosmological hydrodynamical simulation that follows thousands of massive galaxies down to $z=0$ inside a $100Mpc^3$ volume, resolving $\lesssim kpc$ scales. It is run using the Arepo moving-mesh code, and models cooling, stellar population evolution, and various feedback processes. I will discuss a broad range of observables at $z = 0 - 5$, including galaxy masses, morphologies, sizes, and star-formation activity. I will discuss the evolution of scaling relations such as the star-formation main sequence and the Tully-Fisher relation, as well as how individual galaxies evolve with time on these relations.