

The evolution of disk structure and star formation activity of the Galactica galaxies

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Using the unprecedented high-resolution cosmological simulation, New Horizon, we have studied the origin of galactic structures: disk and spheroid. However, since New Horizon has only reached $z=0.7$, covering the first half of the cosmic time, it is not yet clear about the formation of the structures of local galaxies, including the Milky Way. Zooming in two individual galaxies in the field environment in the Horizon-AGN volume, the Galactica runs, we investigate the evolution of one disk galaxy and one S0 galaxy down to $z=0$. Especially, in this talk, we present some preliminary results on how star formation history affects the disk structure: the thickness, age/metallicity, and kinematics. We show (i) the formation of a thin disk from recent star formation triggered by interaction with a neighboring galaxy and (ii) the evolution of the disk structure in a quenched S0 galaxy.

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