

[7GC-23] Preliminary results from cosmological hydrodynamic simulations

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We have performed our first cosmological hydrodynamic simulation using the recently developed SPH+GOPTM code that includes radiative cooling/heating, star formation, and supernova feedback. Here we present preliminary results from the simulation

$3.4 \times 10^4 M_{\odot}$, thus sub-galactic structures, such as satellite galaxies and globular clusters around a host galaxy, can be resolved with more than hundred particles. We follow formation and evolution of the sub-galactic structures in view of their star formation history, merging/accretion rate, and origins.

[7GC-24] Shock waves in and around clusters of galaxies

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We examine the distribution and properties of shock waves within a couple of Mpc from cluster center with single-level grid simulations using up to 20483 grid zones. The effects of cooling/heating and feedbacks from galaxies are also incorporated. There are two different populations of shocks, merger shocks and accretion shocks. We discuss the manifestation of shocks through radio relics.