
Horizon Run 5 - A very large volume hydrodynamical simulation

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Abstract

I will present a new large-scale hydrodynamical simulation carried out using RAMSES at the Korea Institute for Advanced Study. This simulation captures galaxy formation physics, including AGN feedback and chemical abundances, while modeling the large-scale structure of the Universe. This simulation has a resolution of 1 kpc but will simultaneously capture scales of ~ 1 Gpc. I will discuss the simulation setup and our modifications to the RAMSES code, as well as our scientific goals.

I will also present a change to the global refinement criterion implemented in RAMSES, which maintains approximately constant physical resolution throughout the simulation run. Our new approach reduces the artifacts in the star formation history the current method can produce by introducing the higher refinement levels more gradually.

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