Projet Horizon - Horizon Project

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Mare Nostrum @ z=4

Mare Nostrum @ z=4: large scales

Preliminary results for internal reference

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Monday 29 May 2006

<PDF_LINK> First Run

The first run on Mare Nostrum allowed us to carry a "full physics" simulation down to z=4 in about 250 000 hours of CPU.

The preliminary results on this simulation are displayed below; it includes the FOF catalogs, the power spectra/correlation functions, PDFs, skeletons, chemistry, galaxy identification, spectra, colours, together with ftp addresses to download the cubes of gas and DM at a resolution of

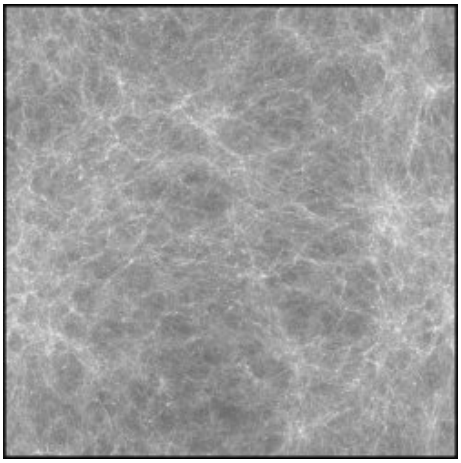
and 1024^3

:

All reduced data is available in /data5/pichon/MN/ on meso.projet-horizon.fr

The science to be published with this simulation is discussed there If you intend to drive a scientific paper on this data, please edit this page accordingly.

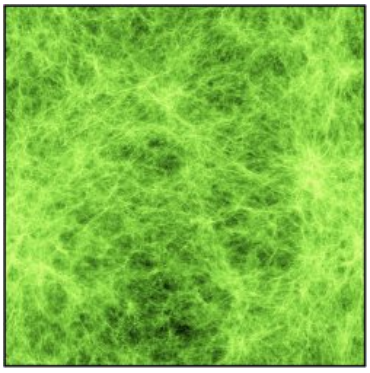
- Dark matter at z=4



Projected Dark Matter MN @ z=4. The resolution is 4096x4096.

MN dark matter travelling created by nemo by J.C. Lambert. only one particle out of a 100 is shown here.
VERY Large but somewhat spectacular images (16kx16k ≈ 50 MegaB) are available on the FTP server of the HORIZON collaboration: HORIZON-FTP

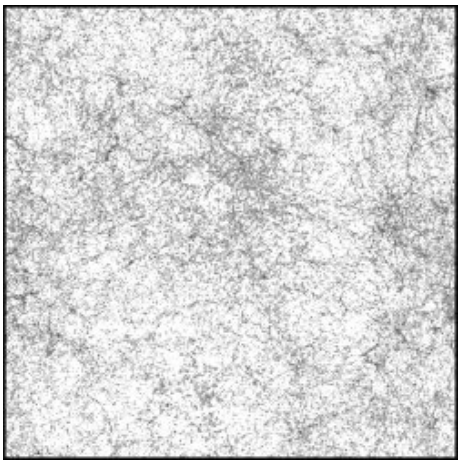
- Gaz at z=4



MN gas @ z=4 Log density of gaz.

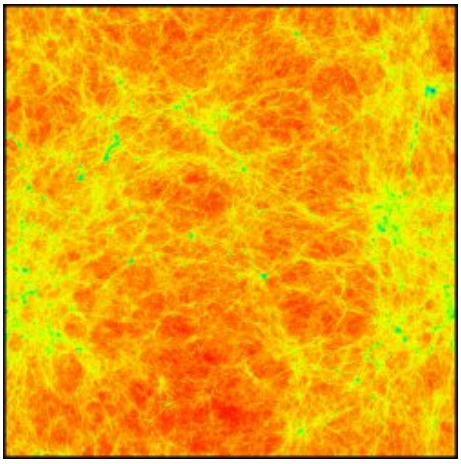
a movie of a traveling within the gas is also available at HORIZON-FTP

- Metals at z=4



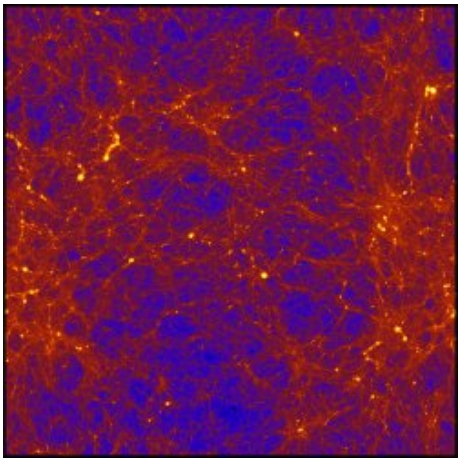
MN metals @ z=4 fraction of metals projected along the line of sight

- Pressure at z=4



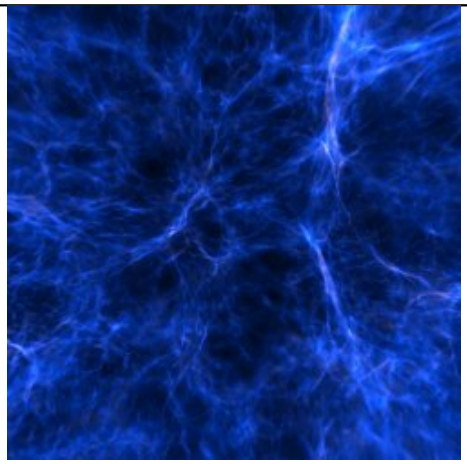
pressure of gas of MN @ z=4 The projected log pressure of the gas at z=4

- Mean integrated temperature at z=4



mean temperature @ z=4

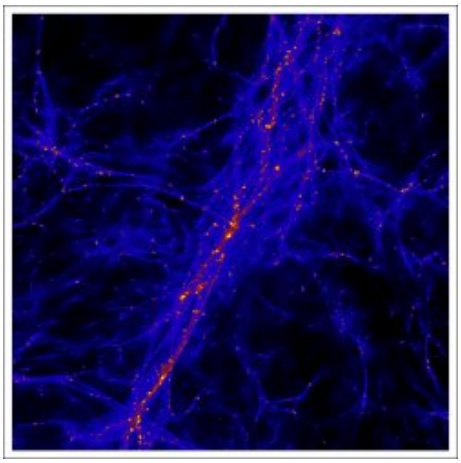
- Ray tracing of the temperature at z=4

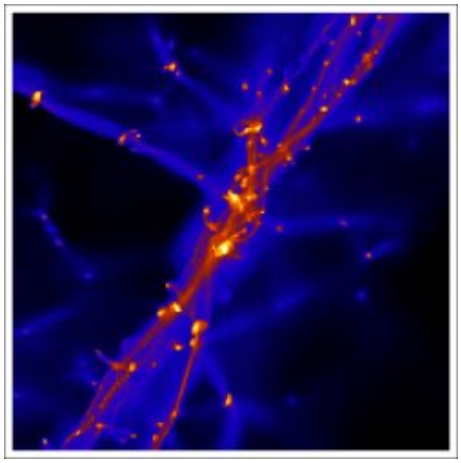


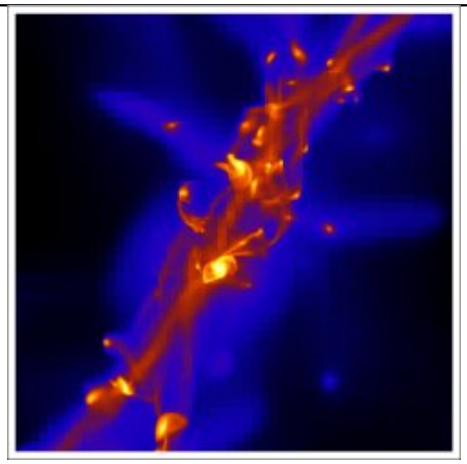
the temperature via povray an example of ray tracing with MN @ z=4 using povray. This is done with a df3 file of 512^3.

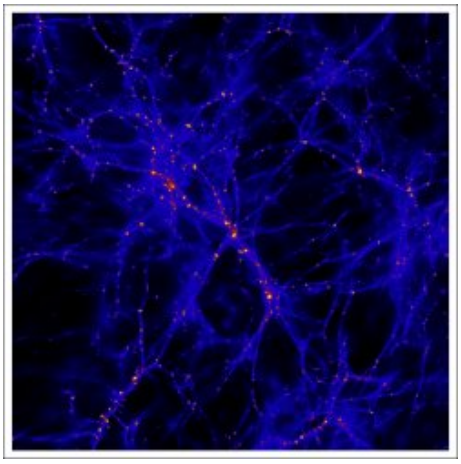
- Fith most massive halo zoom @ z=4

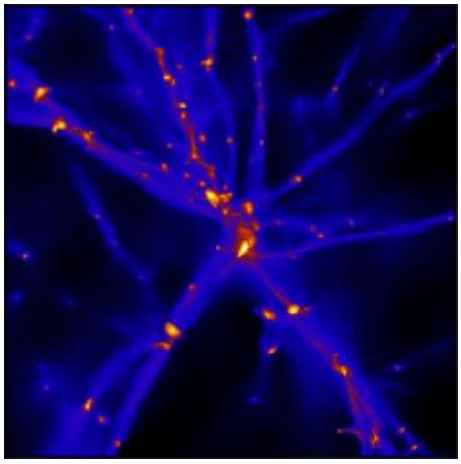
coordinates [0.870163,0.282697,0.75322] mass 289973 particles = ...

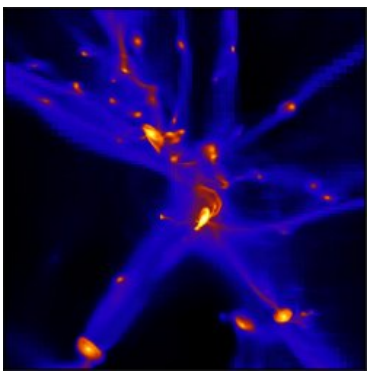


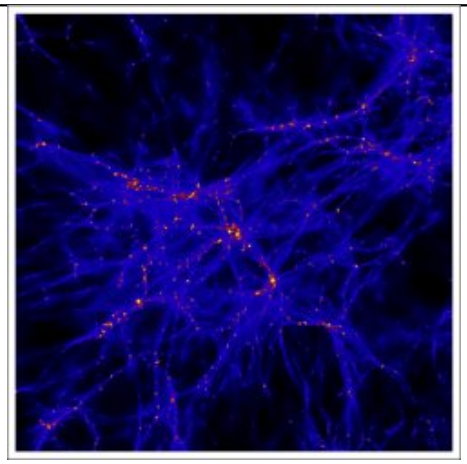


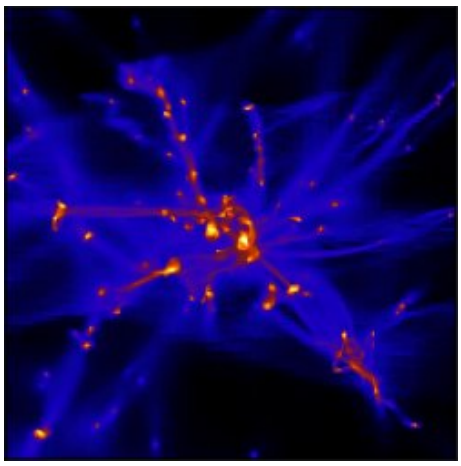


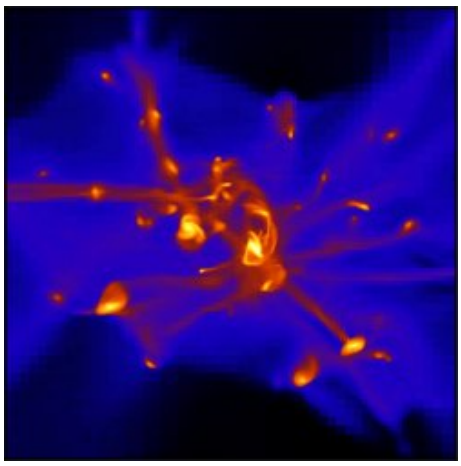








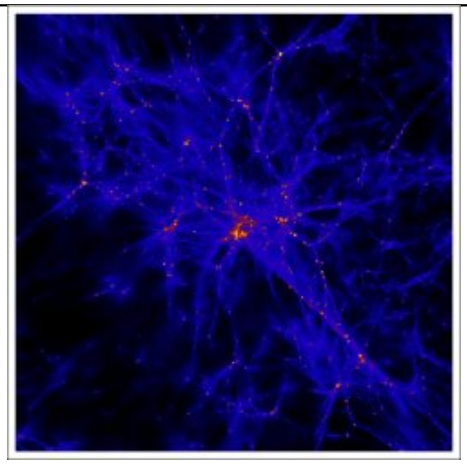


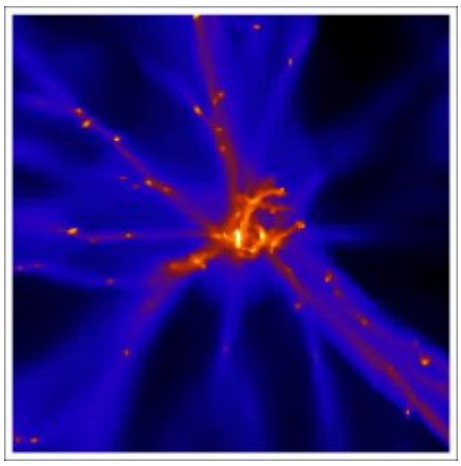


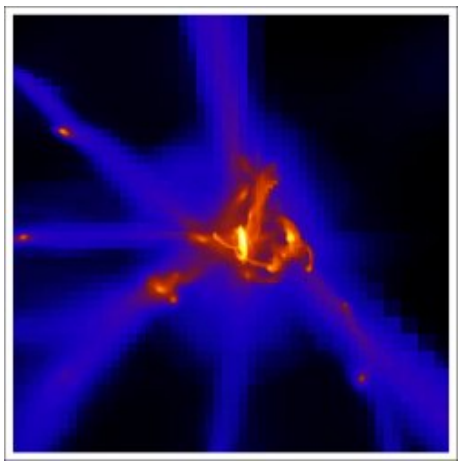
zoom5 x1 along x	zoom 5 x2 along x	zoom5 x3 along x
zoom 5 x1 along y	zoom5 x2 along y	zoom5 x3 along y
zoom5 x1 along z	zoom 5 x2 along z	zoom 5 x3 along z

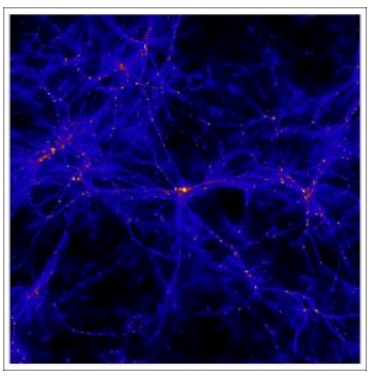
- 6th most massive halo zoom @ z=4

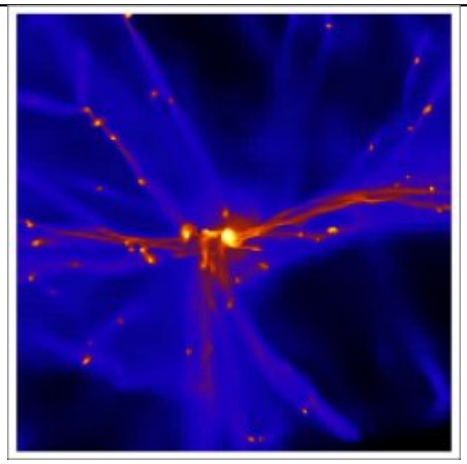
coordinates [0.828596,0.553863,0.429238] mass particles = 262062

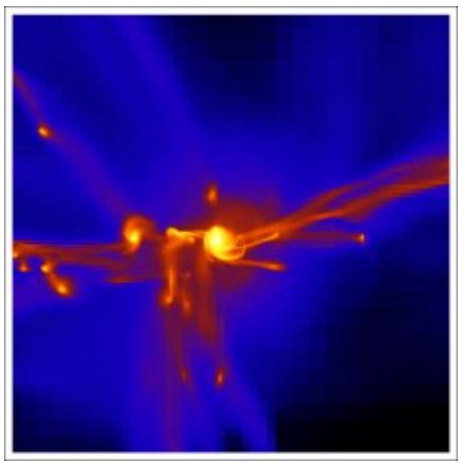


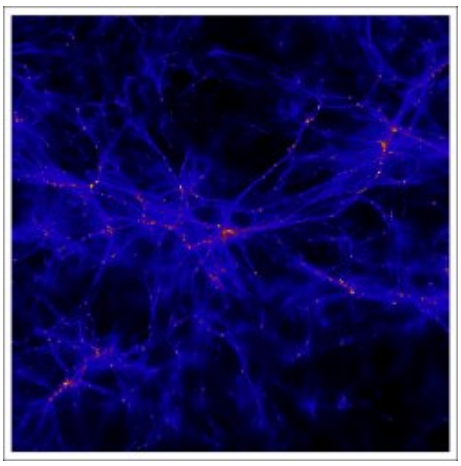


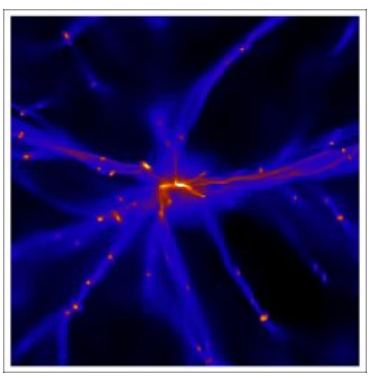


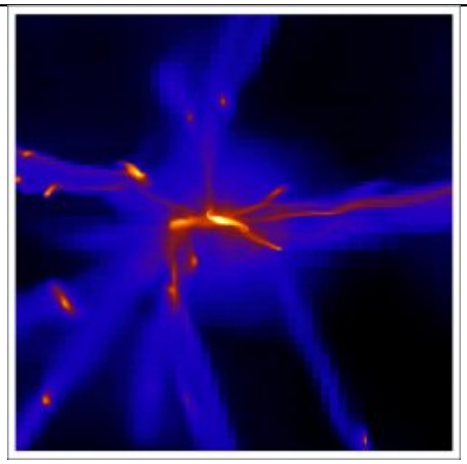






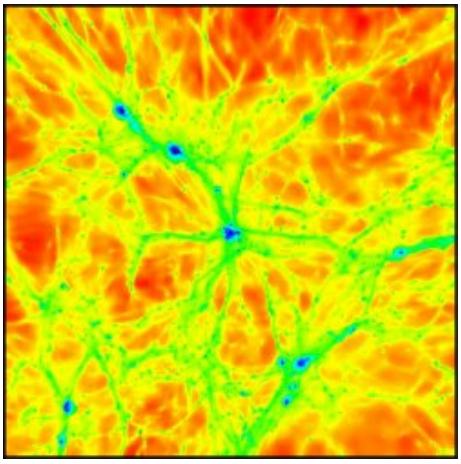


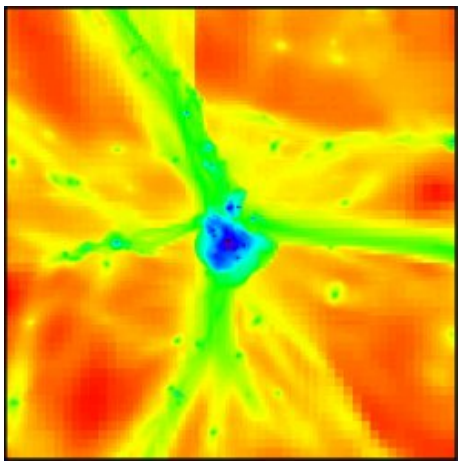


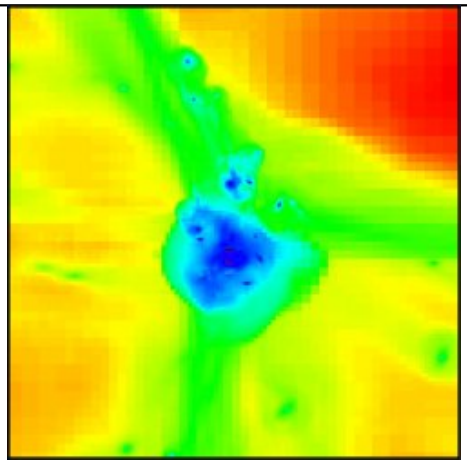


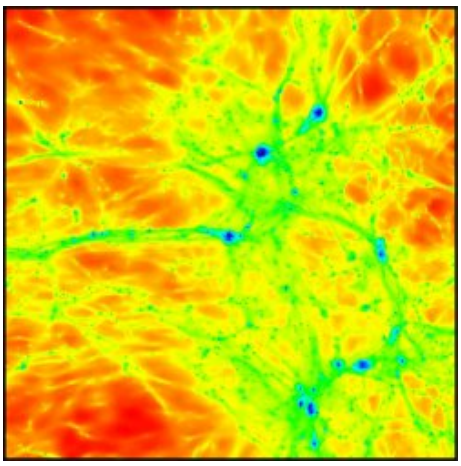
zoom 6 x 1 along x	zoom 6 x 2 along x	zoom 6 x3 along x
zoom 6 x1 along y	zoom 6 x 2 along y	zoom 6 x 3 along y
zoom 6 x1 along z	zoom 6 x2 along z	zoom 6 x 3 along z

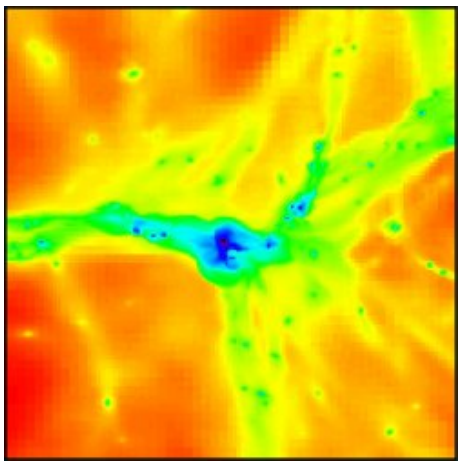
- 8th most massive halo pressure zoom @ z=4 coordinates [0.828596,0.553863,0.429238] mass particles =262062

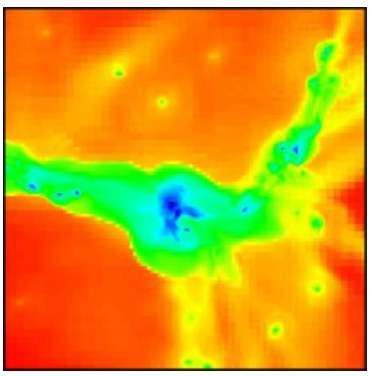


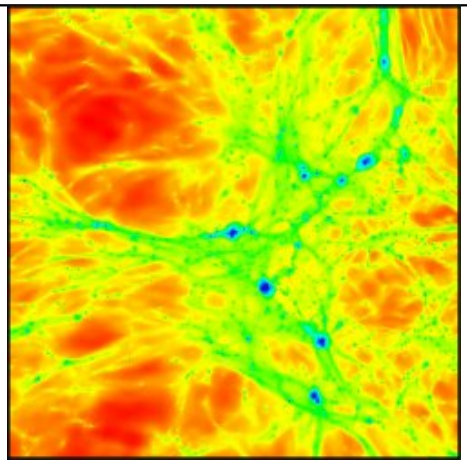


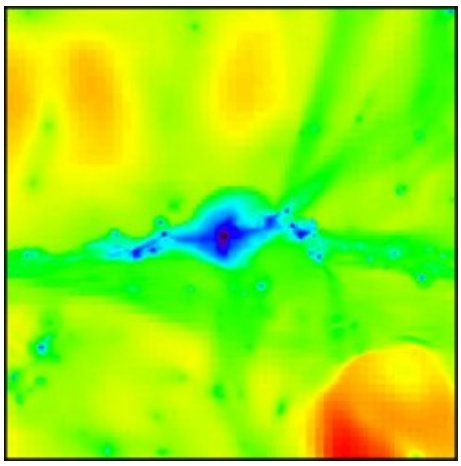


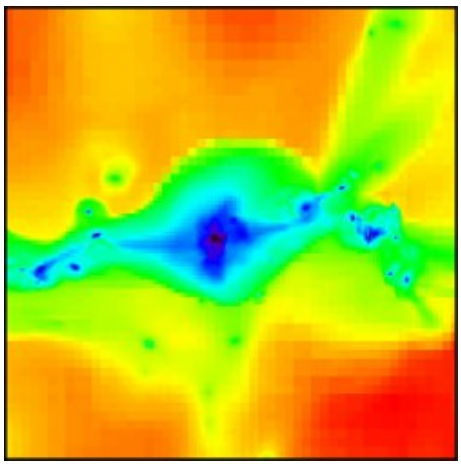






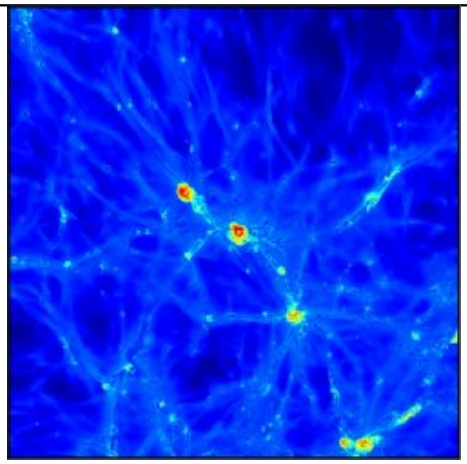


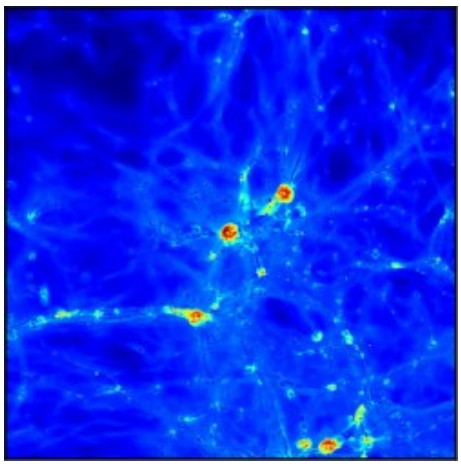


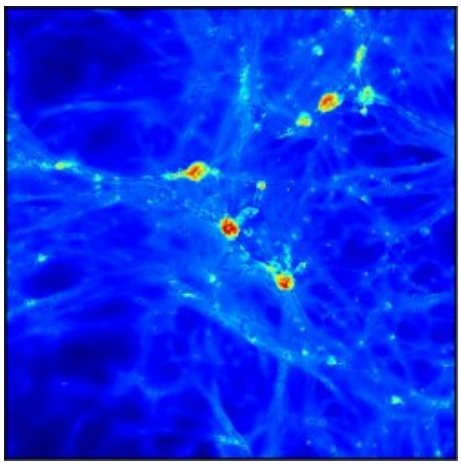


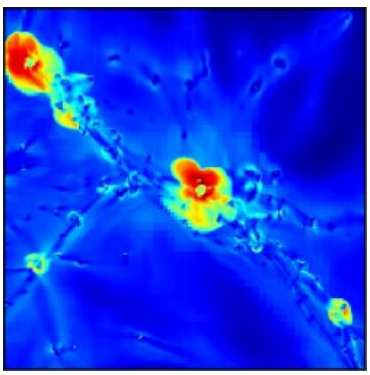
zoom 8 x 1 along x pressure	zoom 8 x 2 along x pressure	zoom 8 x 3 along x pressure
zoom 8 x1 along y pressure	zoom 8 x 2 along y pressure	zoom 5 x3 along y pressure
zoom 8 x 1 along z pressure	zoom 8 x2 along z pressure	zoom 8 x 3 along z pressure

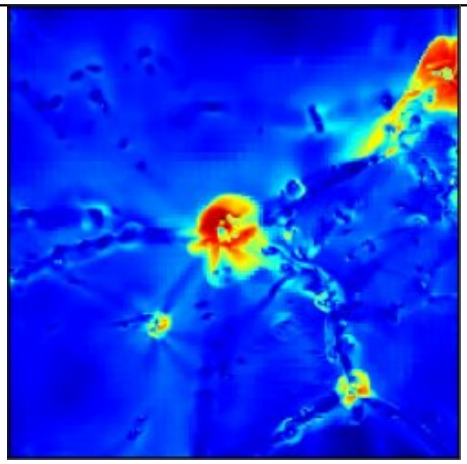
▸ 12th most massive halo (density weighted) projected temperature zoom @ z=4 coordinates [0.843525,0.526963,0.464761] mass particles = 233041

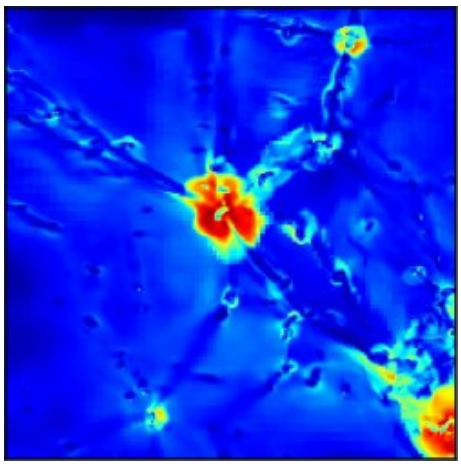


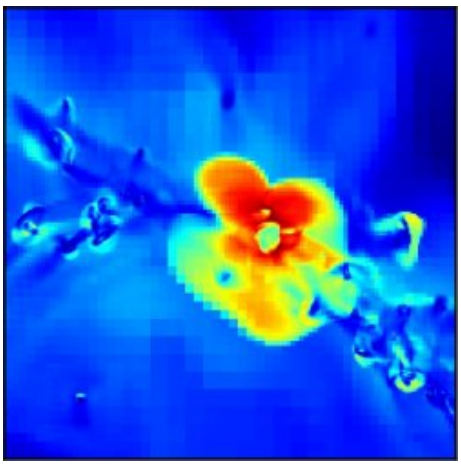


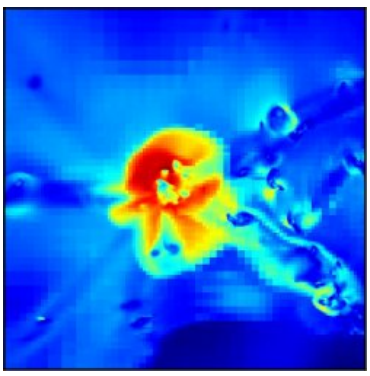


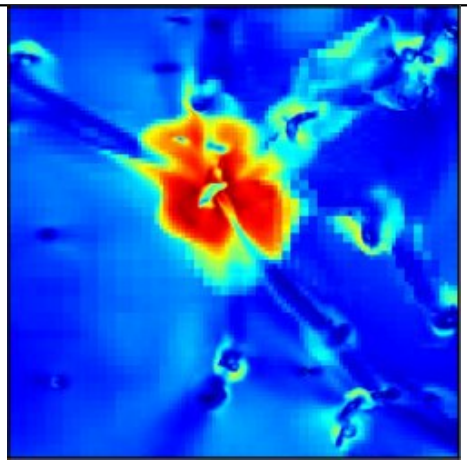






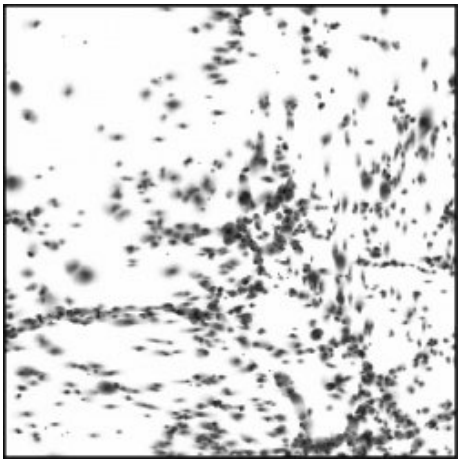


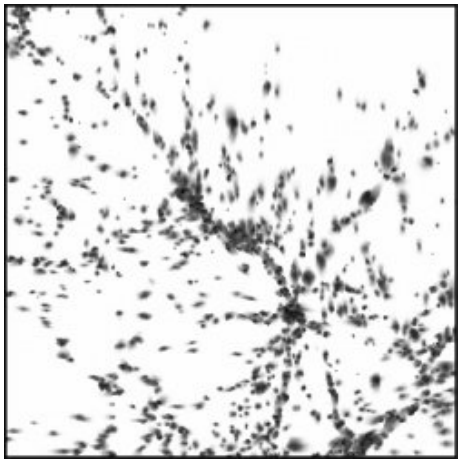


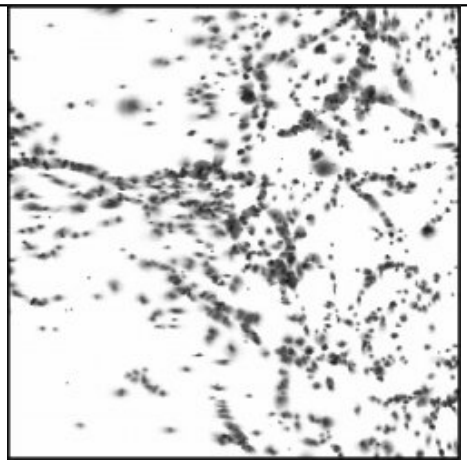


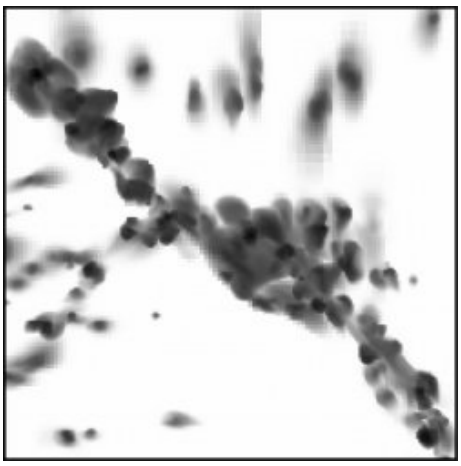
zoom 12 x 1 along x temperature	zoom 12 x1 along y temperarure	zoom 12 x1 along z temperature
zoom 12 x2 along x temperature	zoom 12 x 2 along y temperature	zoom 12 x 2 along z temperature
zoom 12 x 3 along x temperature	zoom 12 x3 along y temperarture	zoom 12 x3 along z temperarure

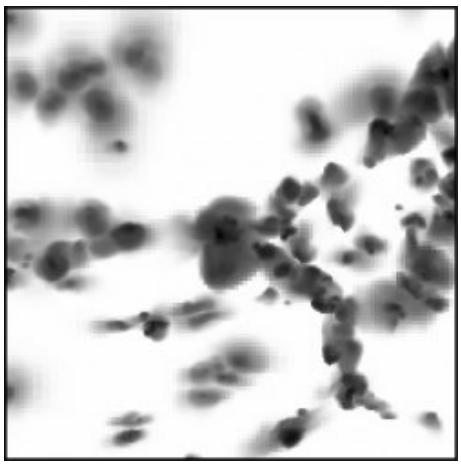
12th most massive halo metal zoom @ z=4 coordinates [0.843525,0.526963,0.464761] mass particles = 233041

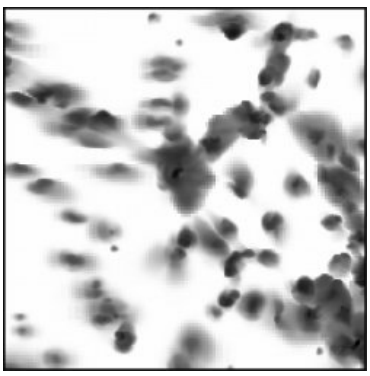


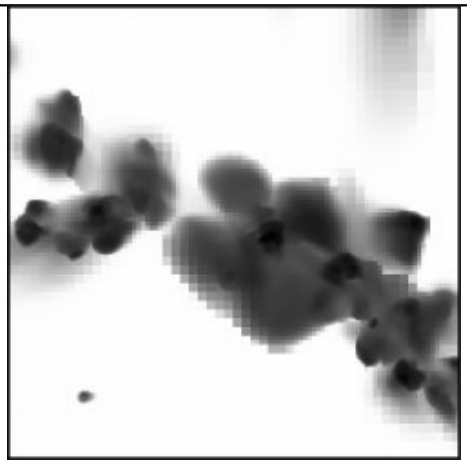


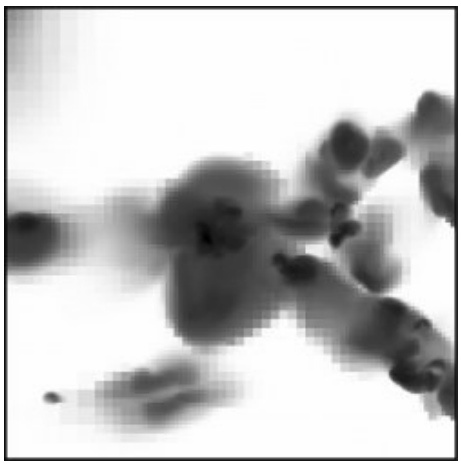


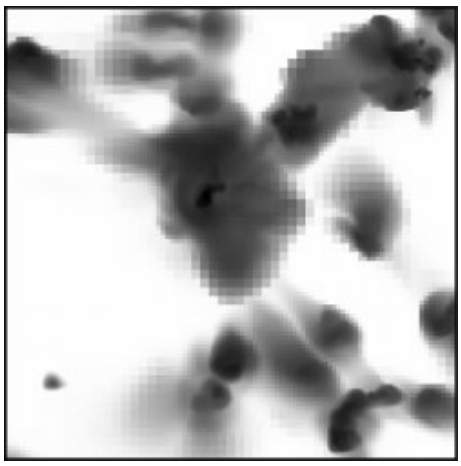












zoom 12 x 1 along y metal	zoom 12 x1 along x metal	zoom 12 x1 along z metal
zoom 12 x2 along x metal	zoom 12 x2 along y metal	zoom 12 x2 along z metal
zoom 12 x3 along x metal	zoom 12 x3 along y metal	zoom 12 x3 along z metal

The rest of the analysis is found here and there

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