Visualisation of collision of galaxies and installation of initial conditions

Second presentation for the Scientific Modelling Computer Lab

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Collision of galaxies: visualisation with gadgetviewer

Installing Gadget File Viewer:

- `http://astro.dur.ac.uk/~jch/gadgetviewer/index.html`

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Installing GTK+ 2.0:

```
sudo apt-get install gtk+2.0
```

Collision of galaxies: downloding

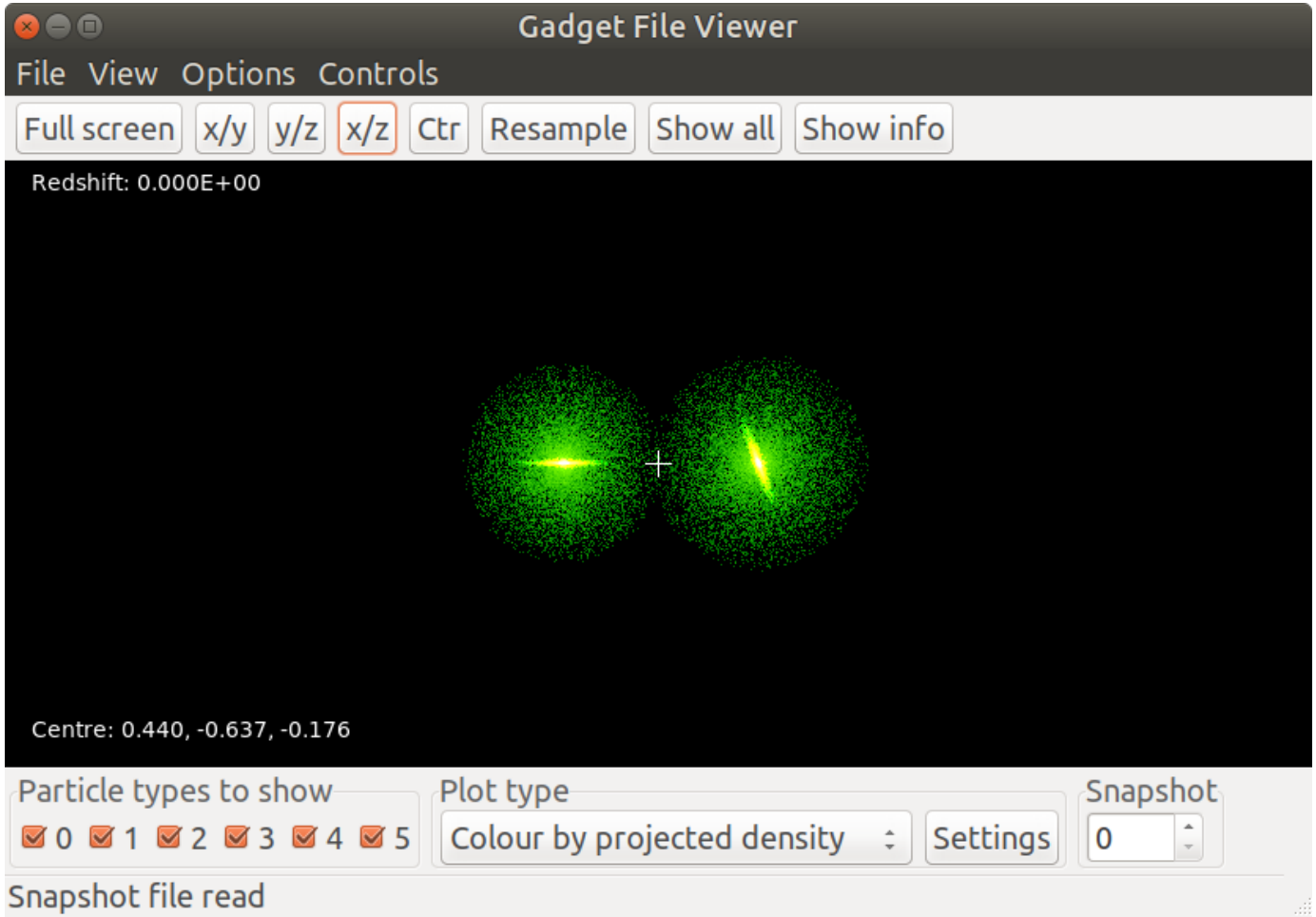

Figure: The Gadget File Viewer program.

Collision of galaxies: visualisation with gadgetviewer

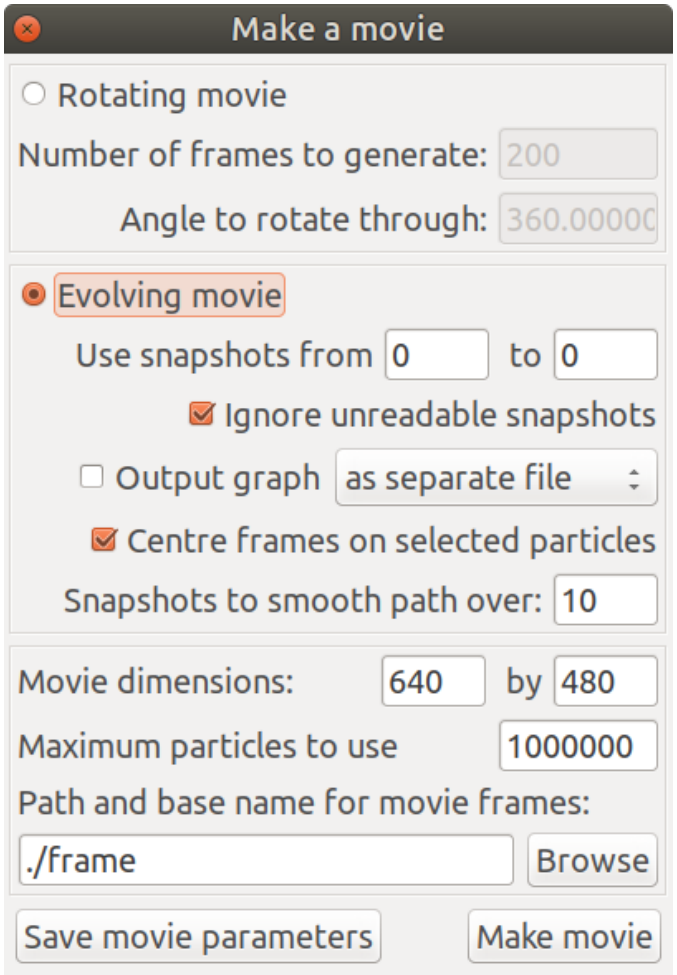

Figure: The Make a movie panel.

Collision of galaxies: make the videos

https://deparkes.co.uk/2018/01/05/create-video-images-ffmpeg/

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Now let me show the videos...

N-GenIC

https://www.h-its.org/2014/11/05/ngenic-code/

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main.c:3:10: fatal error: drfftw_mpi.h: Nincs ilyen fájl vagy könyvtár
#include <drfftw_mpi.h>

N-GenIC

https://www.h-its.org/2014/11/05/ngenic-code/

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main.c:3:10: fatal error: drfftw_mpi.h: Nincs ilyen fájl vagy könyvtár
#include <drfftw_mpi.h>

http://www.fftw.org/fftw2_doc/fftw_6.html

N-GenIC test

```
marika@Otletesgep: ~/Gadget/N-GenIC
Fájl Szerkesztés Nézet Keresés Terminál Súgó
marika@Otletesgep:~/Gadget/N-GenIC$ mpiexec -np 8  ./N-GenIC  ics.param --mca or
te_base_help_aggregate 0 ...
Task=0 Local_nx=16
Task=1 Local_nx=16
Task=2 Local_nx=16
Task=3 Local_nx=16
Task=4 Local_nx=16
Task=5 Local_nx=16
Task=6 Local_nx=16
Task=7 Local_nx=16

allocated 4.18945 Mbyte on Task 0 for FFT's

reading Lagrangian glass file...
reading 'dummy_glass.dat' with 4096 particles

Nglass= 4096

262144 particles on task=0  (slabs=16)
262144 particles on task=1  (slabs=16)
262144 particles on task=2  (slabs=16)
262144 particles on task=3  (slabs=16)
262144 particles on task=4  (slabs=16)
262144 particles on task=5  (slabs=16)
```

N-GenIC test

marika@Otletesgep: ~/Gadget/N-GenIC

Fájl Szerkesztés Nézet Keresés Terminál Súgó

```
262144 particles on task=7  (slabs=16)

Total number of particles  = 0002097152


start computing displacement fields...
vel_prefac= 3.50542  hubble_a=28.0435 fom=0.999995

starting axes=0...

starting axes=1...

starting axes=2...

Maximum displacement: 502.569 kpc/h, in units of the part-spacing= 0.428859

writing initial conditions...
done with writing initial conditions.

IC's generated.

Initial scale factor = 0.015625

marika@Otletesgep:~/Gadget/N-GenIC$
```

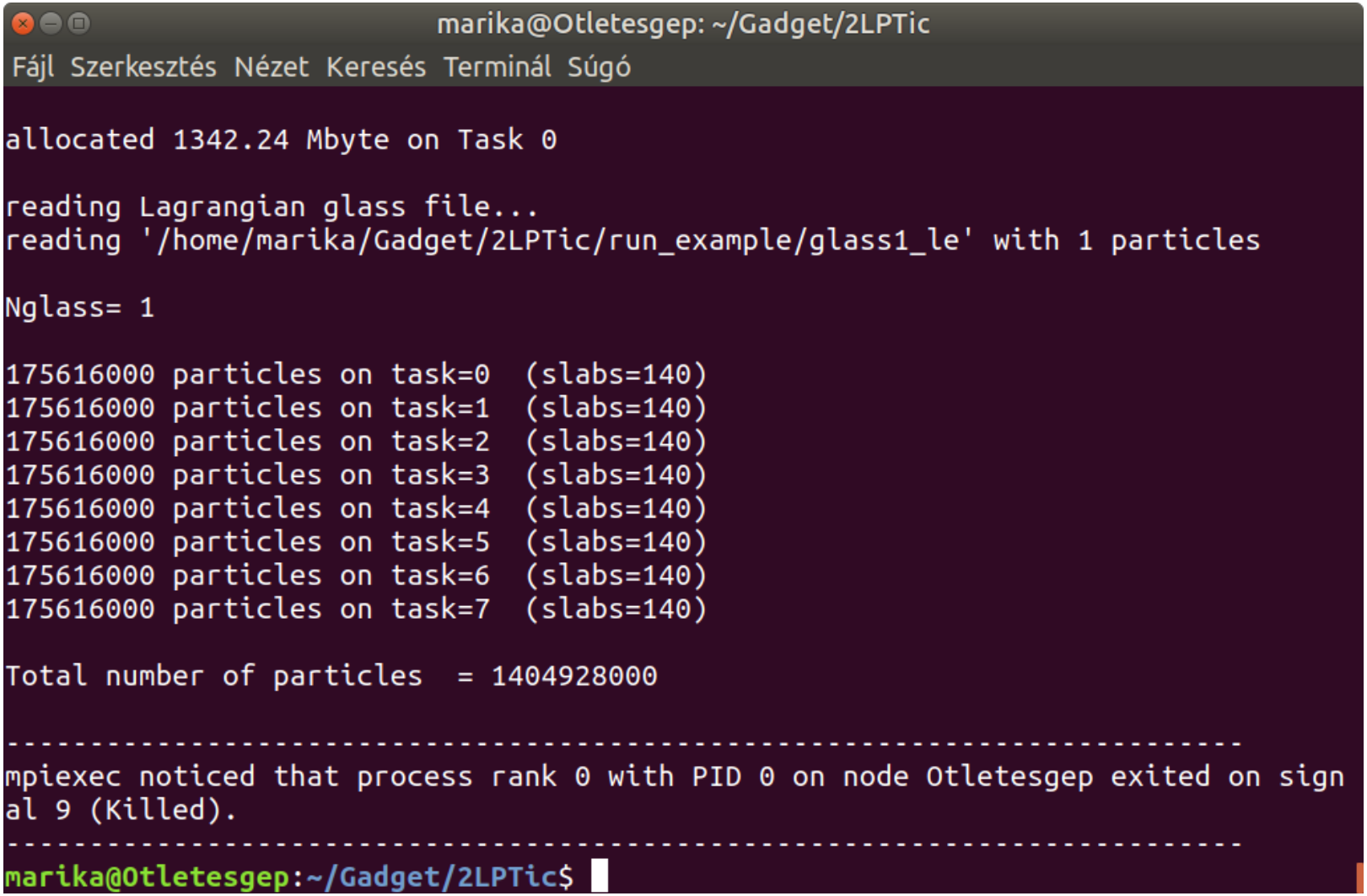
2LPTic

https://cosmo.nyu.edu/roman/2LPT/

```
marika@Otletesgep: ~/Gadget/2LPTic
Fájl Szerkesztés Nézet Keresés Terminál Súgó
marika@Otletesgep:~/Gadget/2LPTic$ mpiexec -np 8  ./2LPTic  ./run_example/2lpt_C
armen.param --mca orte_base_help_aggregate 0 ...
found 401 pairs of values in input spectrum table

Normalization of spectrum in file:  Sigma8 = 33.1892
Normalization adjusted to  Sigma8=0.8   (Normfac=0.000581014)

Task=0 Local_nx=140
Task=1 Local_nx=140
Task=2 Local_nx=140
Task=3 Local_nx=140
Task=4 Local_nx=140
Task=5 Local_nx=140
Task=6 Local_nx=140
Task=7 Local_nx=140

allocated 1342.24 Mbyte on Task 0

reading Lagrangian glass file...
reading '/home/marika/Gadget/2LPTic/run_example/glass1_le' with 1 particles

Nglass= 1

175616000 particles on task=0  (slabs=140)
```

2LPTic

https://cosmo.nyu.edu/roman/2LPT/



Following steps

Atlasz:

/centering https://hpc.iig.elte.hu/dokuwiki/doku.php

Install all the packages to Atlasz