# Relion

Log in on the igbmc HPC or the team GPU

```
ssh -X login@hpc.igbmc.fr

ssh -X login@phantom-node39 #GPU node for lamour-ruff team

module load relion/4.0.0

module load ctffind/4.1.13

module load topaz/0.2.5
```

Executable location:

- CTF estimation/CTFFIND-4.1/CTFFIND-4.1 : /shared/software/ctffind/4.1.13/bin/ctffind
- Manual picking/Display/Topaz : /shared/software/miniconda3-admin/envs/topaz-0.2.5/bin/topaz

## 1. Begin processing with relion

Load and start relion (from cbi-compute-01 or the team GPU node (phantom-node39 for Lamour-Ruff))

```
relion& #start relion in the folder with movies
```

#### Job Relion/Import

Give the path to the *.tif , specify the pixel size, voltage and hit **RUN** You can **RESUME** the job when more movies are transferred and converted

#### Estimation the camera gain

Estimate the gain with at least 200 movies (redo if needed with a larger number)

```
relion_estimate_gain --i Import/job001/movies.star --j 8 --max_frames 10000
--random true --o estimated_gain.mrc
```

Explanation of options:

- –j: number of thread
- –max_frames: target number of frames to average (rounded to movies)
- –random: randomize the order of input movies before taking subset

#### Job Relion/Motion correction

Specify the dose per frame, the number of patches 5x5m, provide the gain file, and set several MPI (number of tasks in parallel) and several (as a multiple of the number of frames in the movies) threads (number of cpu per task)

### Display micrographs for visual inspection

Open a window to select the display parameters of a micrograph:

```
relion_display --i Micrograph.mrc --gui
```

Or

Specifity the parameters for display in the command:

```
relion_display --i Micrograph.mrc --scale 0.2 --lowpass 10 --angpix 0.862 --
sigma_contrast 3
```

Explanation of options:

- –i: Input; can be a single micrograph (.mrc) or a stack (.star), but not a movie (.eer, .tif)
- –scale: display size (0.2 = 20% of original)
- –lowpass: lowpass filtering (5 to 10 is a good range)
- –angpix: angströms/pixel from the camera (0.862 for KriosI at x81000, 0.901 for KriosII and 0.729 for Glacios)
- –sigma_contrast: contrast value to adjust (1 to 4, depending on the image, lowpass,...)