

# TUTORIAL 06:

## CREATE CLIM CONFIG WITH NESTING

# OBJECTIVES

- Prepare the CROCO forcing files for the child grid
- Compile the code
- Run the model
- Visualize the outputs

# STEP 1: Logging onto the cluster

- From a terminal/konsole:

```
ssh -X login@scp.chpc.ac.za
```

- Reserve an interactive processor for pre-processing:

```
[login@login2 ~]$ qsubi1
```



- Go into your CROCO directory (lustre/croco):

```
[login@cnode0220 ~]$ cd lustre/CROCO
```



- Go into your Run Clim:

```
[login@cnode0220 ~]$ cd Run_Clim
```



# STEP 2: Creating input files for Parent Grid

## ➤ Launch Matlab :

```
[login@cnode0220 Run_Clim]$ matlab -nodesktop 
```

## ➤ Create your croco grid

```
>> make_grid 
```

## ➤ Create your surface forcing files

```
>> make_forcing and/or make_bulk 
```

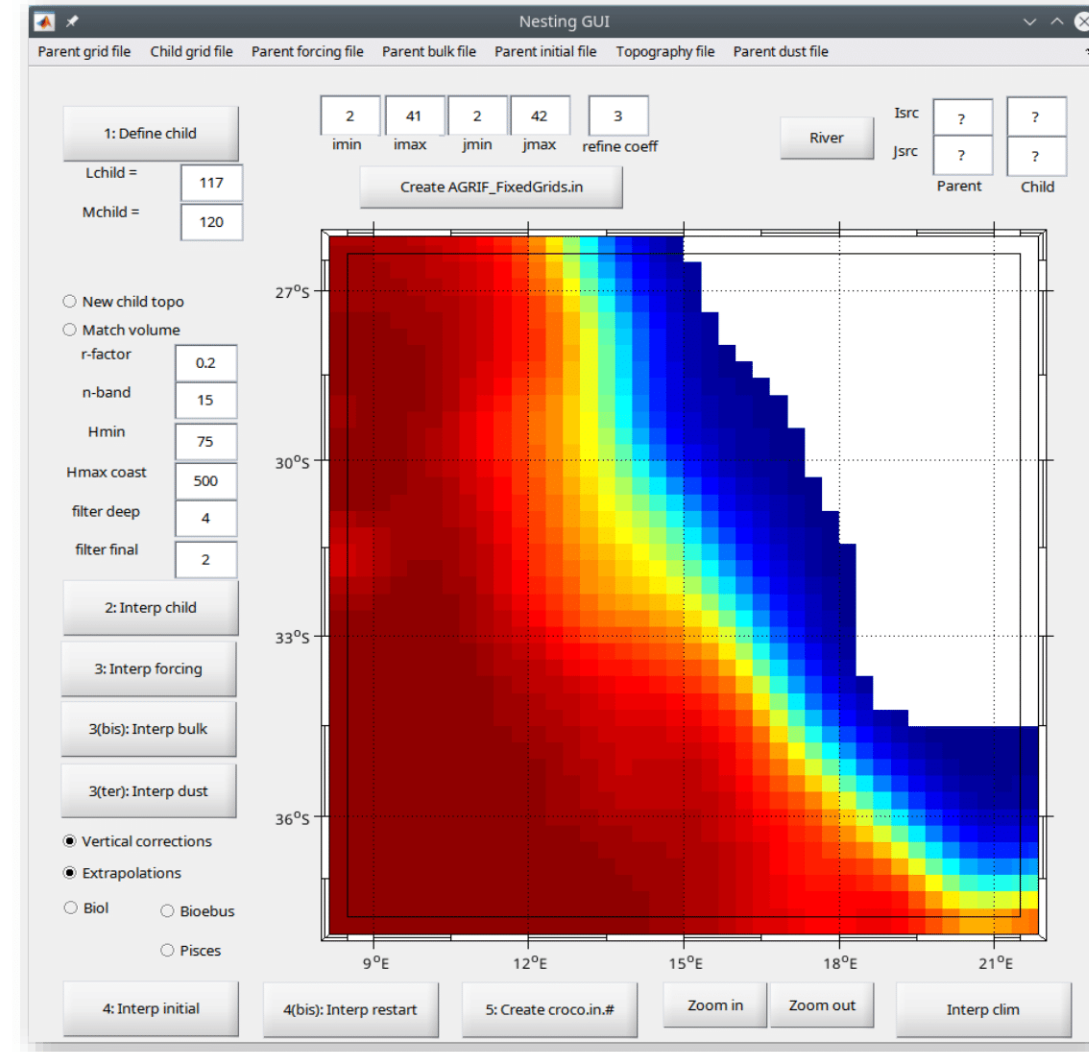
## ➤ Create your CROCO initial and boundary conditions

```
>> make_clim or make_bry; make_ini 
```

# STEP 3: Creating input files for Nested Domain 1/2

➤ Launch nesting gui tool :

>> **nestgui**



# STEP 3: Creating input files for Nested Domain 1/2

- Launch nesting gui tool :

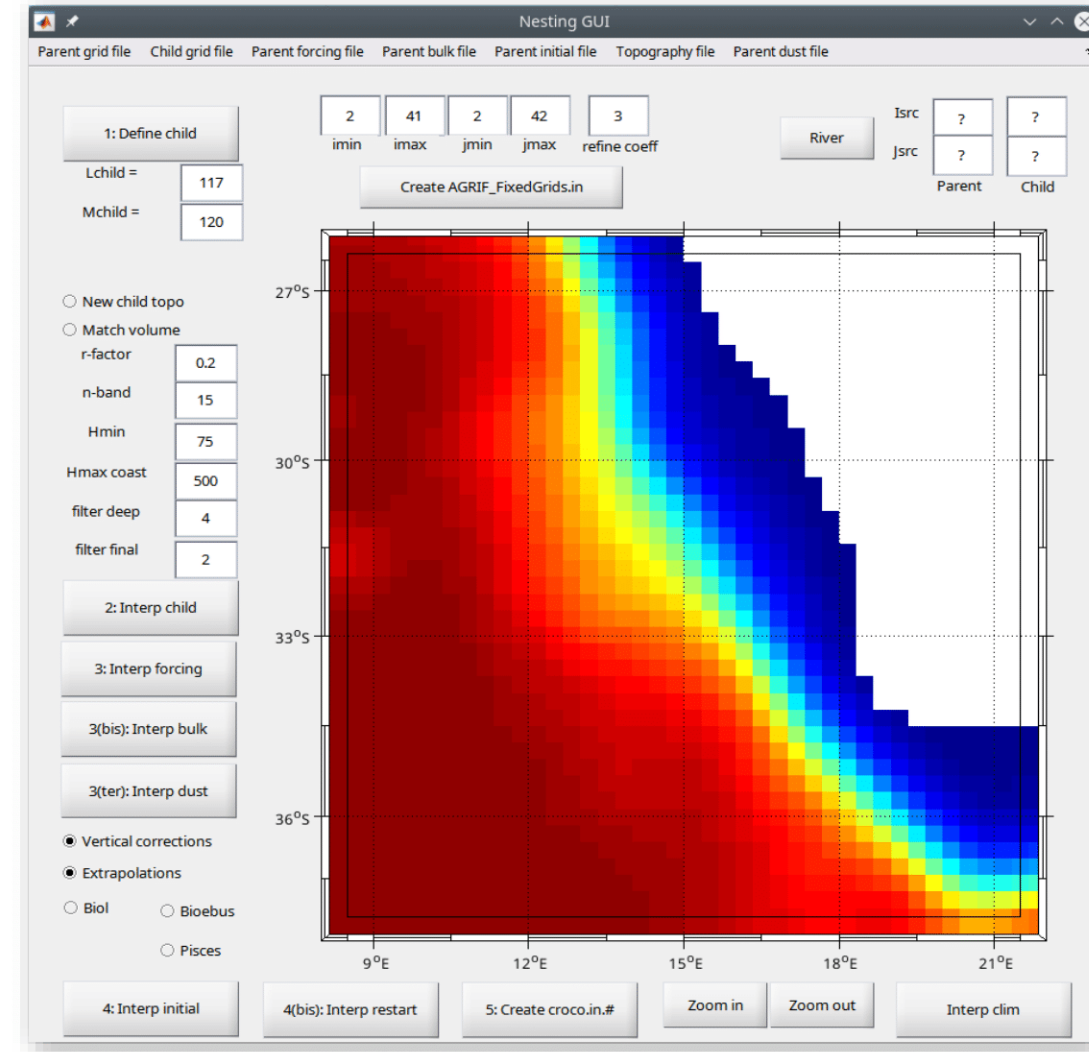
>> **nestgui**



- Load parent grid in nestgui :

CROCO\_FILES/croco\_grd.nc

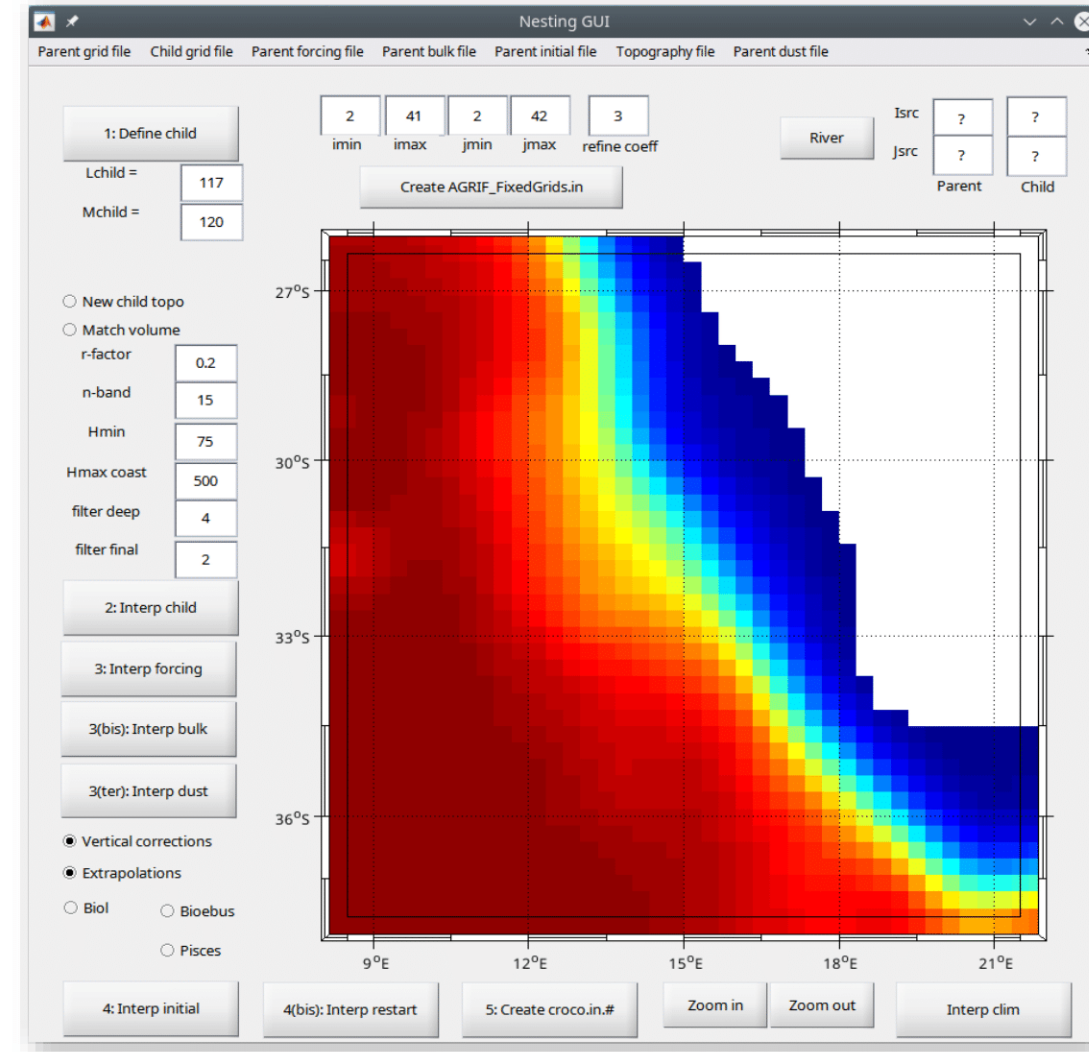
- 1. Define the child grid
- 2.a Interpolate the child grid  
and create the grid
- 2.b Click on **Create AGRIF\_Fixed\_grid.in**



# STEP 3: Creating input files for Nested Domain 2/2

- 3. Create the child forcing file
- 3.(bis) Create the child bulk forcing file
- 4. Create the child initial conditions
- 5. Create the child parameter file  
**croco\_inter.in.1**

>> **exit**



# STEP 4: Compiling CROCO model

- Copy the script to compile the code in your Run\_Clim directory :

```
cp /home/apps/chpc/earth/CROCCO_Workshop/CROCO_TRAINING_Basic/  
3_Some_files/jobcomp_lengau .
```

- Edit and fix the parameter file **param.h**

```
[login@cnode0220 Run_Clim]$ nedit param.h & NODS
```

- Edit and set the **cppdefs.h** to activate nesting capability

```
[login@cnode0220 Run_Clim]$ nedit cppdefs.h & NODS
```

- Compile CROCO using the **jobcomp\_lengau** script

```
[login@cnode0220 Run_Clim]$ ./jobcomp_lengau NODS
```

# STEP 5: Running CROCO

- Copy the job file to run the code in your Run\_Clim directory :

```
cp / home/apps/chpc/earth/CROCCO_Workshop/CROCO_TRAINING_Basic/  
3_Some_files/run_croco.pbs .
```



- Edit the script **run\_croco.pbs**

```
[login@cnode0220 Run_Clim]$ nedit run_croco.pbs &
```

- Launch your simulation

```
[login@cnode0220 Run_Clim]$ qsub run_croco.pbs
```

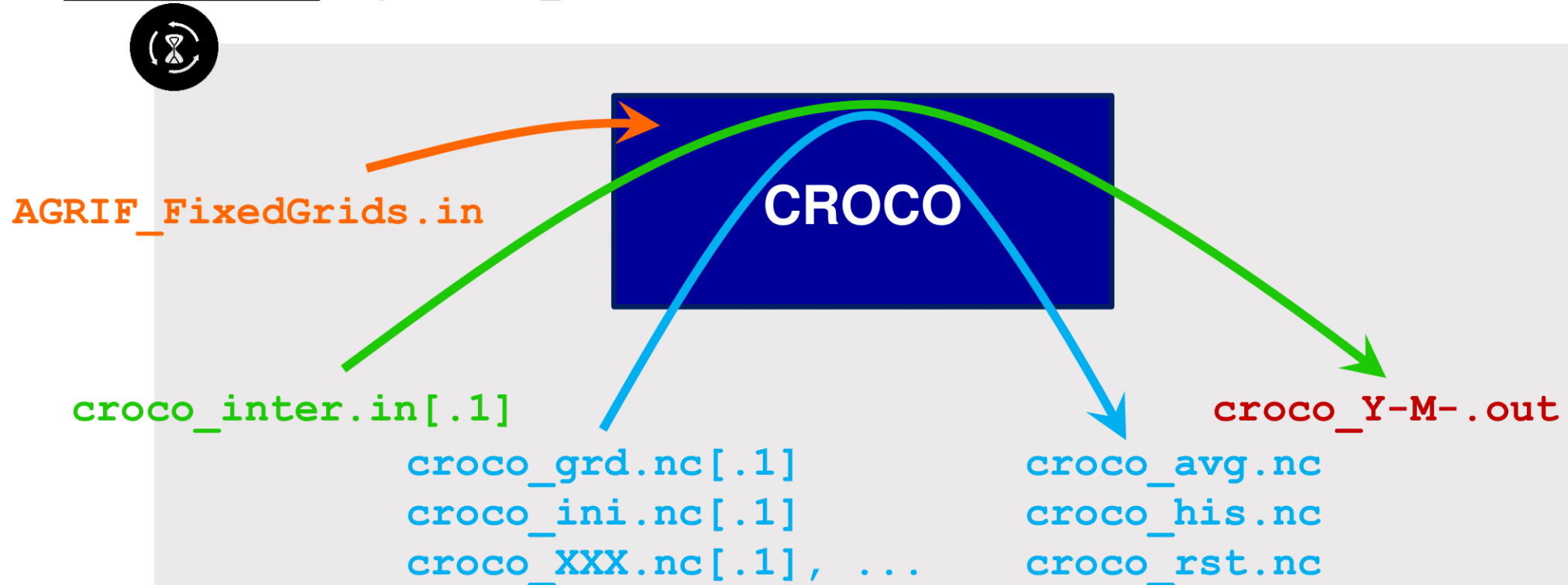
NODES

# STEP 5: Running CROCO

run\_croco.pbs:

run\_croco.pbs.oxxxx  
run\_croco.pbs.exxxx

- 1 Copy executable, input files for parent and child, and croco\_inter.in[.1].template
- 2 Loop over time : adjust croco\_inter.in[.1] and run CROCO:





# THE BUG SHEET



➤ Problem associated with :

- Diagnostic 1

  - ➔ Solution:

- Diagnostic 2

  - ➔ Solution:

# STEP 6: Visualising model outputs

- Launch Matlab:

```
[login@cnode0220 Run_Clim]$ matlab -nodesktop 
```

- Visualise the outputs with croco\_gui

```
>> croco_gui
```



- Enjoy!!!

# STEP 7: Exiting

- Exit Matlab:

**exit**



- Give back the compute node:

**exit**



- Logoff the Lengau cluster:

**exit**

