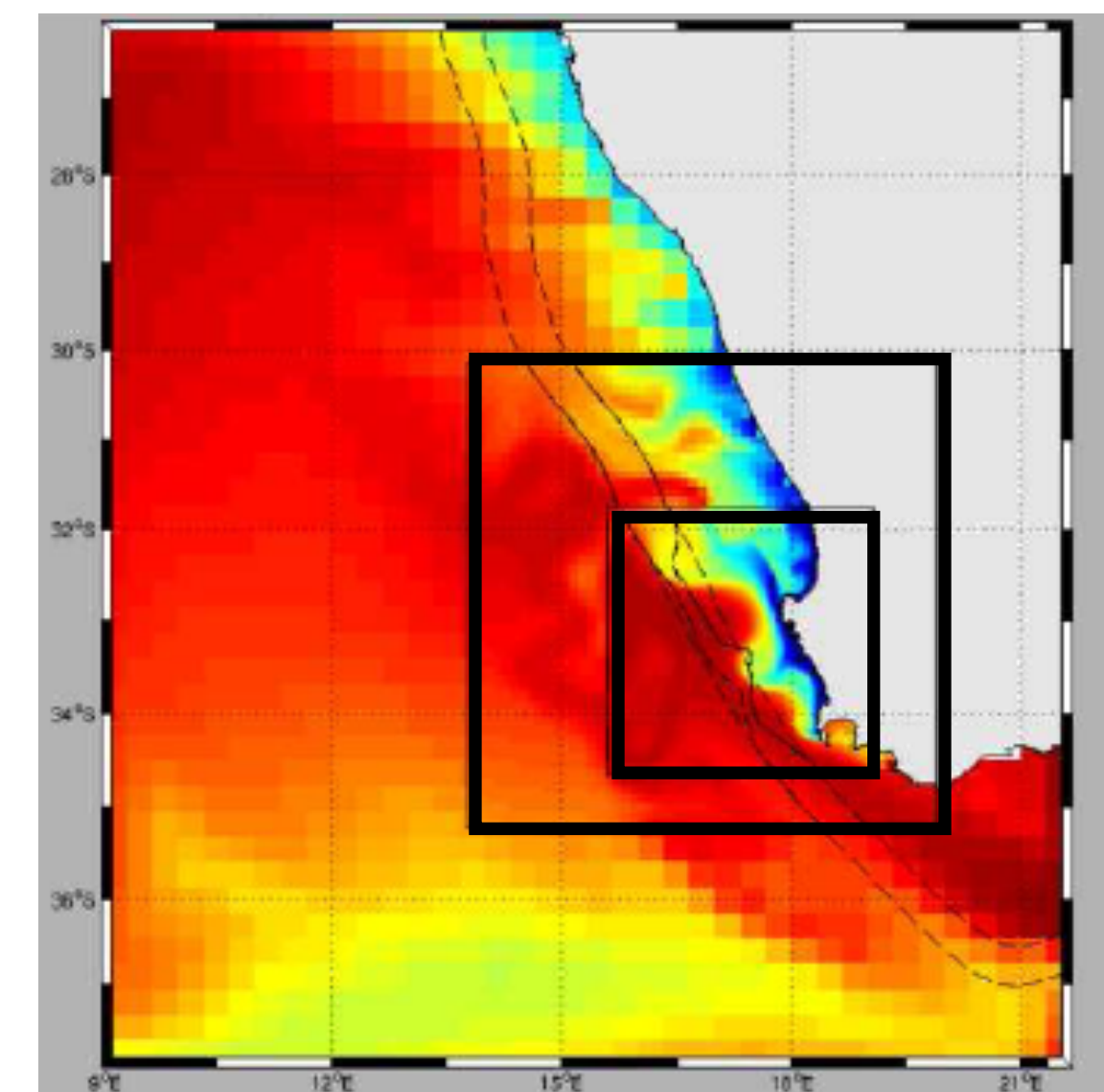
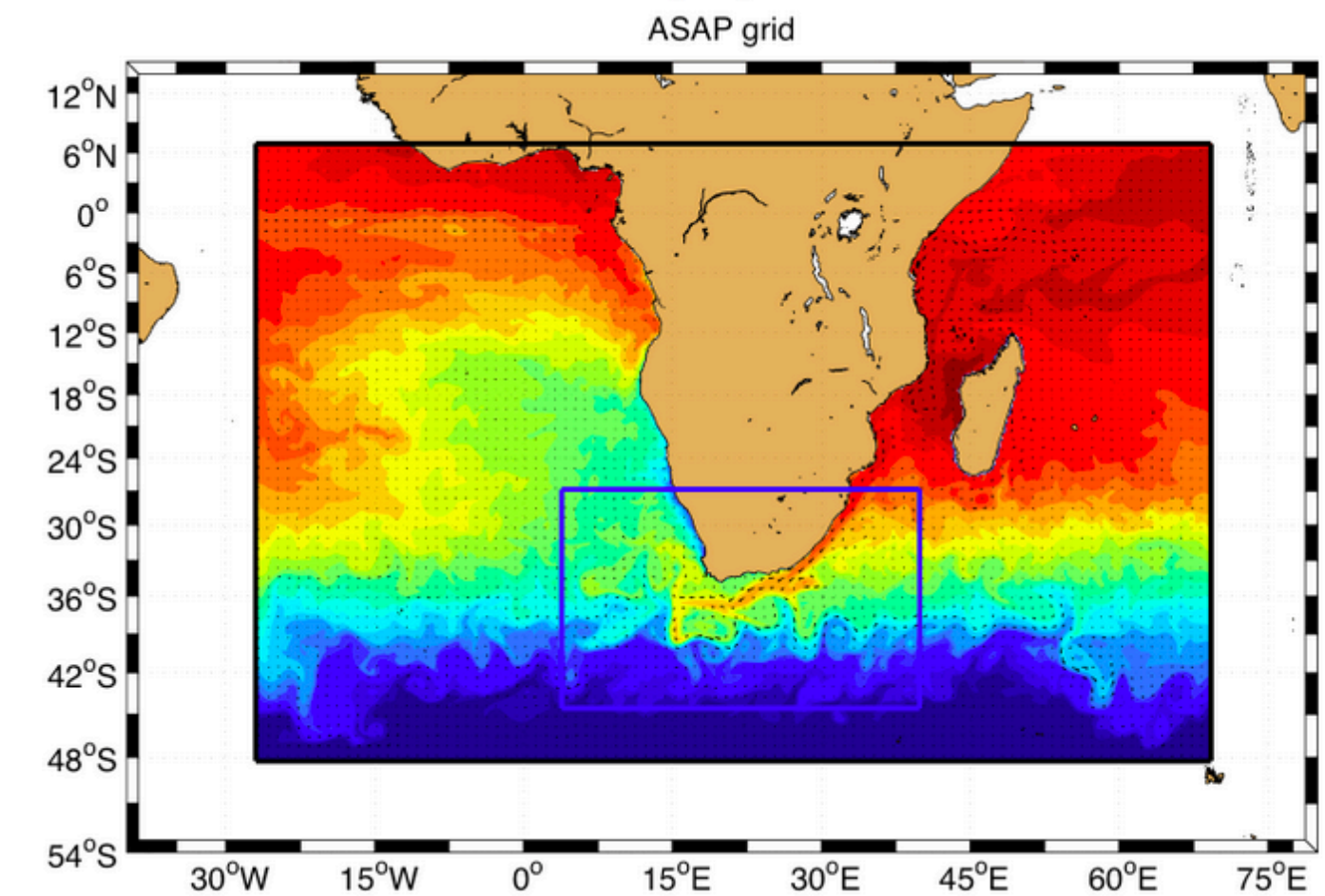
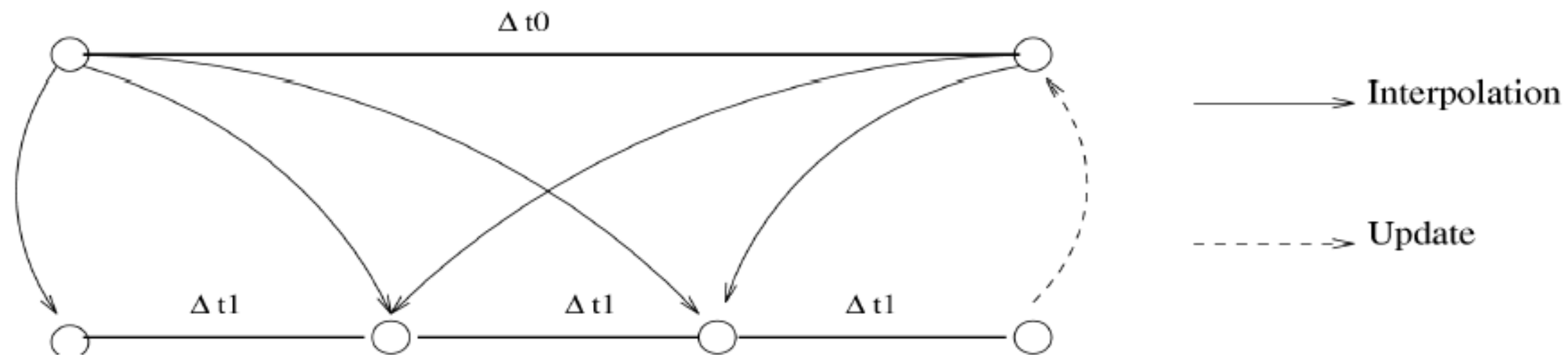


Nesting : general view

based on AGRIF library

- Manage arbitrary number of fixed grid and embedded levels
- AGRIF : Adaptative Mesh Refinement (ljk.imag.fr/MOISE/AGRIF/)
- 1-way and 2 way nesting capability:
 - ✓ 1 way coarse grid feed fine grid
 - ✓ 2 way nesting : feed back of the fine grid on the coarse grid

Temporal coupling between a parent and a child grid for a refinement factor of 3 :



Nesting in practice within CROCO

AGRIF provides :

- generic interpolation libraries
- a code transformation and automatic re-writing

Activation and use :

1. define your zoom(s) in **Agrif_FixedGrids**
create your input files for all grids

2. to compile
just add **#define AGRIF** in `cppdefs.h`
run `./jobcomp` as usual

3. to run : launch croco as you're used to

Nest GUI

Follow the steps :

1- Tune the child domain

1- Define the child domain :
Size of the child grid

2- Create the child grid file :
What topography file?
Child grid volume
Parameters to change
--> `roms_grd.nc.*`

3- Create the surface forcing file:
Select `roms_frc.nc` or `roms_blk.nc`
--> `roms_frc.nc.*` or `roms_blk.nc.*`

4- Create the initial condition file:
Select `roms_ini.nc`
If different topography
Interpolate parent biological variables
--> `roms_ini.nc.*`

4- Select `roms_rst.nc`
--> `roms_rst.nc.*`

5- Generate `roms.in.*`.
Create `AGRIF_fixedGrids.in`

Locate river on the coast

Generate boundary condition to test the child model alone

Nesting : zoom definition

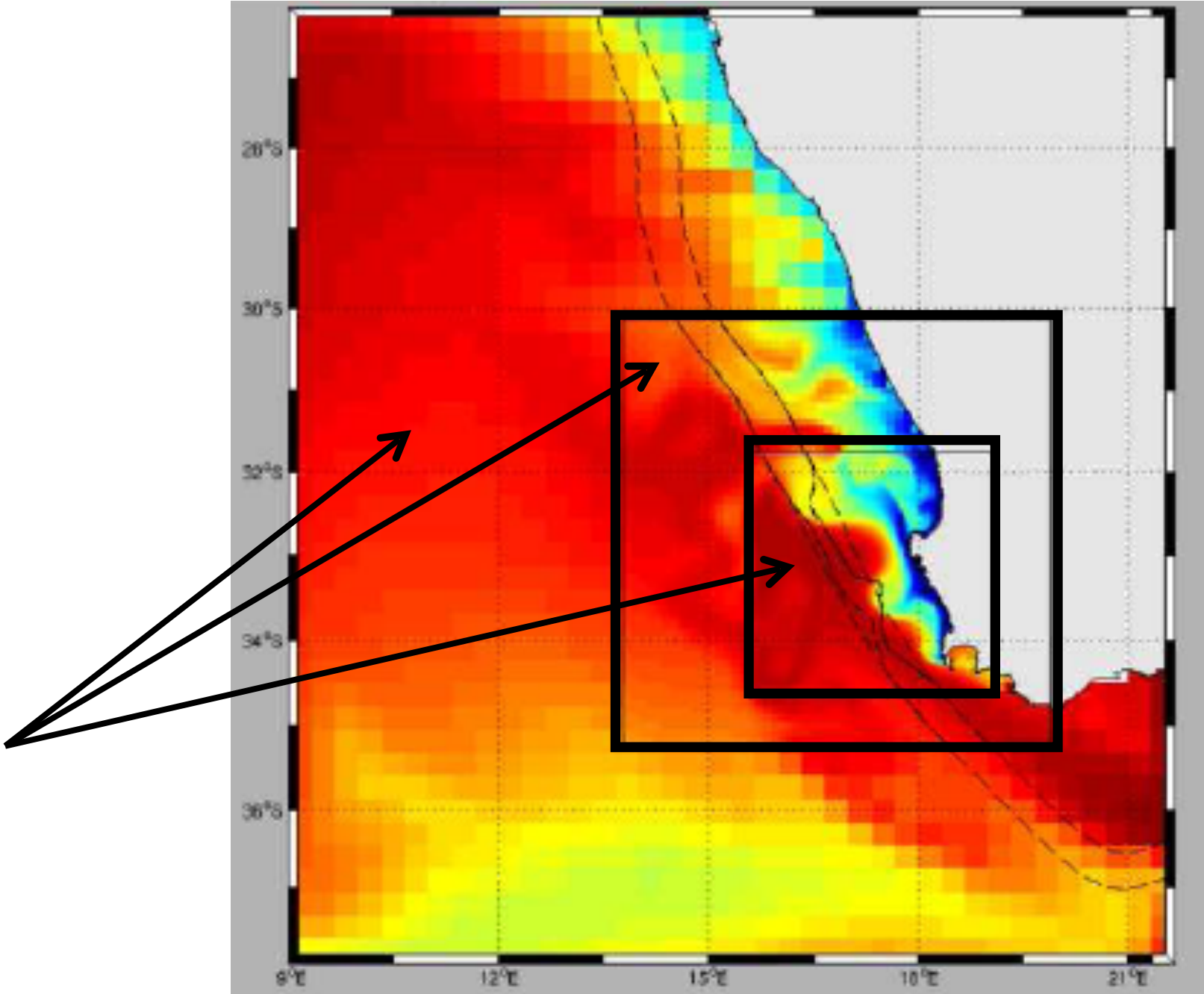
The file Agrif_FixedGrids

```
1
23 37 12 29 3 3 3 3
0
# number of children per parent
# imin imax jmin jmax spacerefx spacerefy timerefx timerefy
# [all coordinates are relative to each parent grid!]
```

2 grids : #0 and #1
#1 is embedded in #0

```
1
23 37 12 29 3 3 3 3
1
12 28 15 33 3 3 3 3
0
# number of children per parent
# imin imax jmin jmax spacerefx spacerefy timerefx timerefy
# [all coordinates are relative to each parent grid!]
```

3 grids : #0,#1 and #2
#1 embedded in #0 ;
#2 is embedded in the #1



Needs to run an embedded model :

Surface forcing and initial conditions datas files.

For grid #xx :

- croco_grd.nc.xx
- croco_blk.nc.xx
- croco.in.xx
- croco_frc.nc.xx
- croco.ini.nc.xx