

# 3D-exercice

AROME training course  
Portugal, 4-7 March 2008



**METEO FRANCE**  
Toujours un temps d'avance

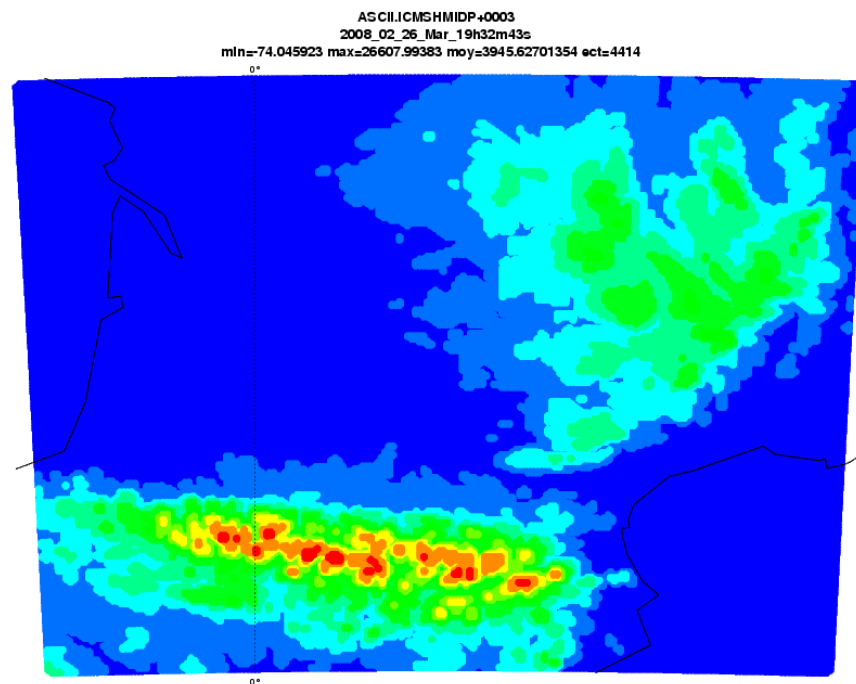
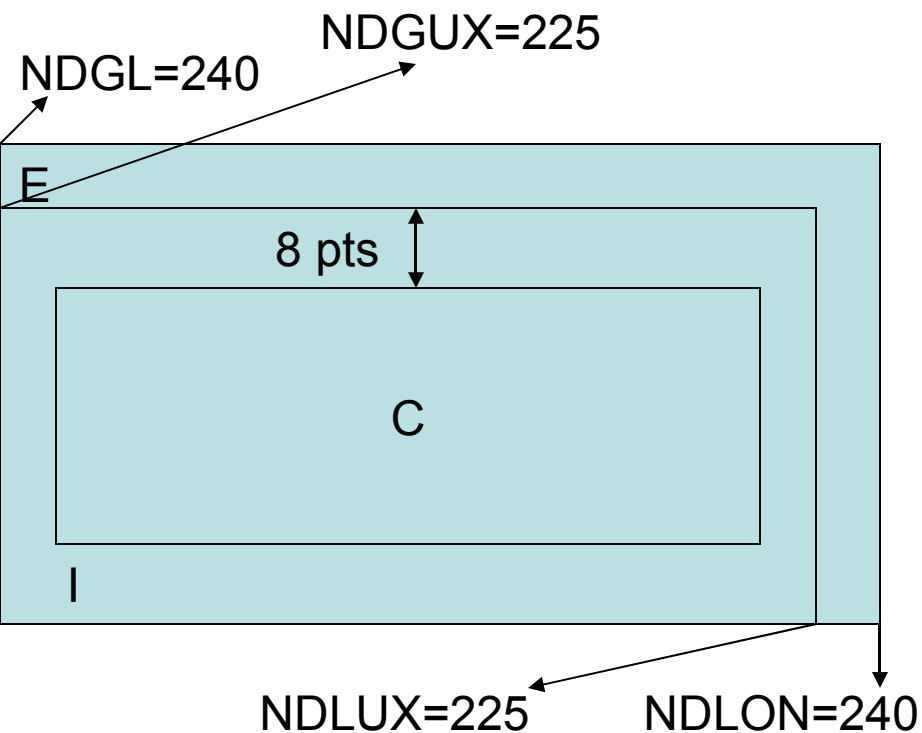
# Practical 3D exercice

- Run the 3D-AROME model on a small domain on hpce and plot the results on your local computer
- For the graphics use the « practical-graphics.ppt » guide
- Use the same binary that you have built yesterday for the 1D-exercice
- Make some namelist changes and check the results
- Changes proposed :
  - Impact of the tuning of the numerical diffusion
  - H/NH
  - ...



# Practical exercise

- The horizontal domain have been set for you. It has the following characteristics :



# EX 1 : Run the reference run

- To run a reference run you need : a job and namelists. This material has been prepared.
- Make a directory runs3D on your HOME directory, then create a REF directory on this one
- Copy the `~scc/run/REF/run_REF.tar` on your REF directory
- De-tar this file
- Make the following changes :
  - Change YOU by your user account
  - Redo a binary without the changes of yesterday or use the REF-pack (the one on hirald directory commented in the job)
  - Submit the job
  - Get the files and have a look at it



## EX2 : Sensitivity to the set up of the numerical diffusion

- Create a DIFF directory on your runs3D directory
- Copy your materials on this directory (job and namelists)
- Edit the namelist file and change the horizontal diffusion coefficients
- Do not forget to change REF on DIFF on your job file in order not to through away the reference run
- The horizontal diffusion coefficients are on the namelist NAMDYN (file namel\_previ\_32t3). The names of the coefficients are :
  - RDAMPDIV
  - RDAMPVOR
  - RDAMPT
  - RDAMPQ
  - RDAMPPD
  - RDAMPVD

Put the same value equal to 20. except for RDAMPPD (200000.), submit the job and observe the results

If you have enough time, redo the experiment with RDAMPPD/VD=4. What do you observe ?

## EX3 : Run in Hydrostatics mode

- Create a new directory (HNN) on your runs3D directory
- Copy your materials on this directory (job and namelists)
- Come back to the reference namelist (take it from your REF directory or delete the RDAM\* on the NAMDYN block)
- Switch-off NH setup on your namelist :
  - NAMCT0 → LNHDYN=.F.
  - NAMDYN → NDLNPR=1
- Run the job (of course change the names of the output files not to crush the files created before)
- Get the outputs and compare your REF run with your Hydro run, your DIFF run with your Hydro run
- Redo the same exercise (Hydro run changing the diffusion coefficients all equal to 20 for VOR, DIV, T and Q), what do you conclude ?



## EX4 : Tests your 1D modification on 3D

- Use the changes you have tested on GABLS case on 3D