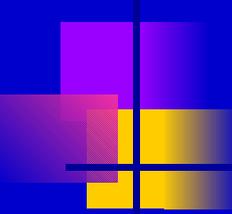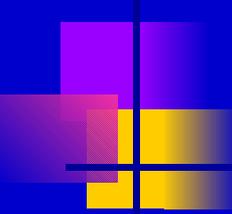# Practical use
of the e923 configuration

Françoise TAILLEFER

CNRM/GMAP

What is this configuration ?

- It is the basis configuration you have to run each time you want to define a new domain for your ALADIN model.

- It produces monthly climatological files.

- These files are necessary for some other configurations, like coupling, post-processing, surface analysis, …

How does e923 proceed ?

- It extracts the needed information from several global databases, which have a different resolution according to the parameter being considered, and the model area too.

- The computations are done in several steps, each for a predefined set of fields, with a possible refinement for some of them.
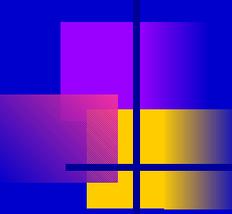
What does e923 produce ?

It prepares monthly files containing climatological 2D fields, mainly surface fields.

- 10 constant fields linked to orography,
- 14 monthly fields describing the surface itself (soil properties, vegetation, …),
- 7 monthly fields linked to the surface model variables (temperature, water content, snow),
- 7 monthly fields to initialize ozone and aerosols.
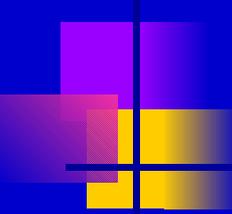
Model area definition

- This model area can be everywhere on the Earth.
- The chosen area will involve the geometric representation.
- 3 types of projection are allowed in the ALADIN code : polar stereographic, Mercator or Lambert.
- The geometry is fixed by namelist in the e923 script.
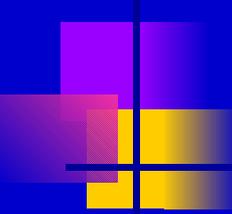
Geometry definition

- Use the PALADIN/PINUTS pack
- Run   domolalo   and fix on demand :
  - south latitude
  - north latitude
  - west longitude
  - east longitude
  - resolution
- Output : file namelist_domain
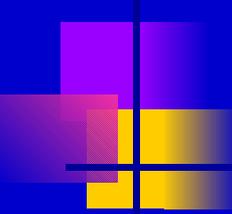
e923 namelist for geometry

- &NEMGEO
  - ELON0
  - ELAT0
  - ELONC
  - ELATC
  - EDELX
  - EDELY
  - /

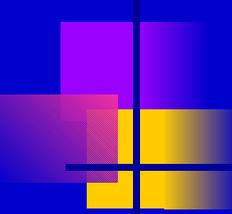- &NAMDIM
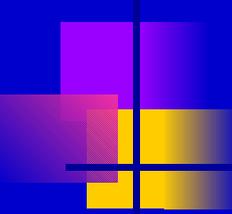 - NDGLG
  - NDGUXG
  - NDLON
  - NDLUXG
  - NMSMAX
  - NSMAX
  - /

Spectral representation

- Defined according to NMSMAX and NSMAX.
- Quadratic : NDLON >= (NMSMAX+1)*3

    NDGL >= (NSMAX+1)*3

- Linear : NDLON >= (NMSMAX+1)*2

    NDGL >= (NSMAX+1)*2

- Orography still quadratic, even if the model is linear → run step 1 two times.

Orography tuning

&NAMCLA

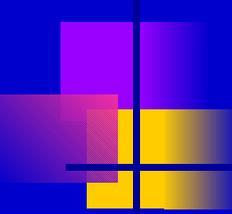|	
FACZ0	orographic part of Z0
FENVN	envelop
LKEYF	spectral orography
LNEWORO	] 2 different functions to
LNEWORO2	] optimize spectral orography
LNORO	import orography

/

e923 for post-processing domain
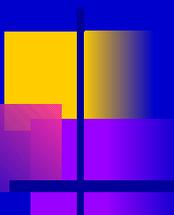
- NAMCLA   LKEYF=.FALSE.
- NAMDIM   NDLON=NDLUXG

                 NDGLG=NDGUXG

                 NSMAX and NMSMAX useless

- NEMGEO   ELON0=ELAT0=0.

                 EDELX and EDELY in degrees

- No need to run steps 8 and 9 because aerosols and ozone are useless.
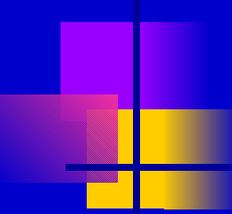
Scripts

- on tora, and on tori soon
- on HPCE
  1. for a quadratic domain
  2. for a linear domain
  3. for a post-processing domain

- some examples on sxobs1 and sxproc1

ENJOY YOURSELVES !!!