How running academic or real cases with ALADIN-NH ?

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Script organisation

BEGIN

1.Header

2. Users parameters initialisation (date, name of experiment …)

3. Get namelist, executable, and files (initial, coupling or climato…)

4. Running executable (TIMEX commande)

5. Save model results

6. Final Cleaning

END

Script organisation

HEADER :

```
# @$-s /bin/ksh

# @$-eo -r  ALDEXP1

# @$-lt 1190 -lT 1200

# @$-lM 600mb -lV 0mb

# @$-lP 1
```

Script organisation

MASTER :

MASTER –c${CONF} -vmeteo -maladin -e${EXP} -t$TSTEP -f $NSTOP -a$ADVEC $ZOPT > lola 2>&1

For example :

CONF=001

ZOPT="-Wl,-d100,-g250,-e1"

EXP=AL2D

TSTEP=7.5

NSTOP=h8

ADVEC=sli

Academic cases

1. 2D cases

a) Preparation of initial file (acadfa 2D)

b) run

c) Post processing (run_flux)

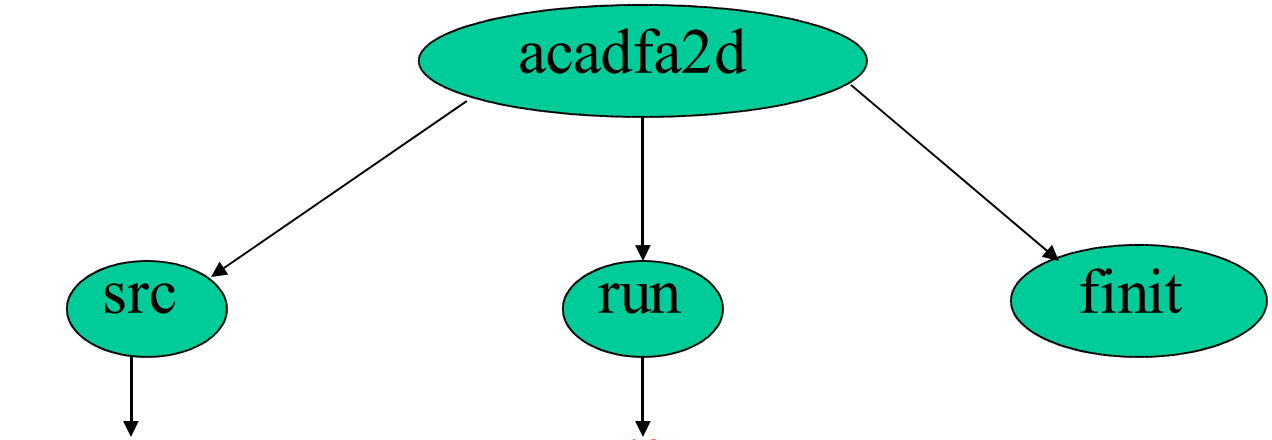
2. 3D cases

a) Preparation of initial file (acadfa 3D)

b) run

c) Post processing (acadpos)

Academic 2D cases - Preparation Initial File (1/6)



Makefile

empty.f

acadfa_sueframe.f

acadfa_main.f

faitou.f

acadtr.f

facadi.f

acadfa_exe

namex

Academic 2D cases - Preparation Initial File (2/6)

*Description of the different steps in **acadfa_main.f** :*

3. Set up internal constants
4. Read the namelist :

Academic 2D cases - Preparation Initial File (3/6)

Namelist parameters:

IDGUX = number of latitudes (C+I)

IDGL = number of latitudes (C+I+E)

IFLEV = number of levels

INSMAX = meridional truncation (3*INSMAX < IDGL)

ZDELY = meridional grid spacing

ZDELZ = vertical spacing of half levels

LMPHYS = .T./.F.: prepare file to run with physics

LREASUR = .T./.F.: prepare file to run with ISBA

LNHDYN = .T./.F.: prepare file to run Aladin-NH

LMAP = must be .FALSE. for academic experiments

Academic 2D cases - Preparation Initial File (4/6)

Namelist parameters:

IPOSITION = position of hill top (index)

ZWIDTH = half width of obstacle

ZHEIGHT = height of obstacle

ZT00 = surface reference temperature

ZP00 = surface reference pressure

ITROPO = number of isothermal levels above tropopause

ZBRVAF = Brunt-Vaisala frequency

ZU00 = reference zonal wind

ZV00 = reference meridional wind (surf)

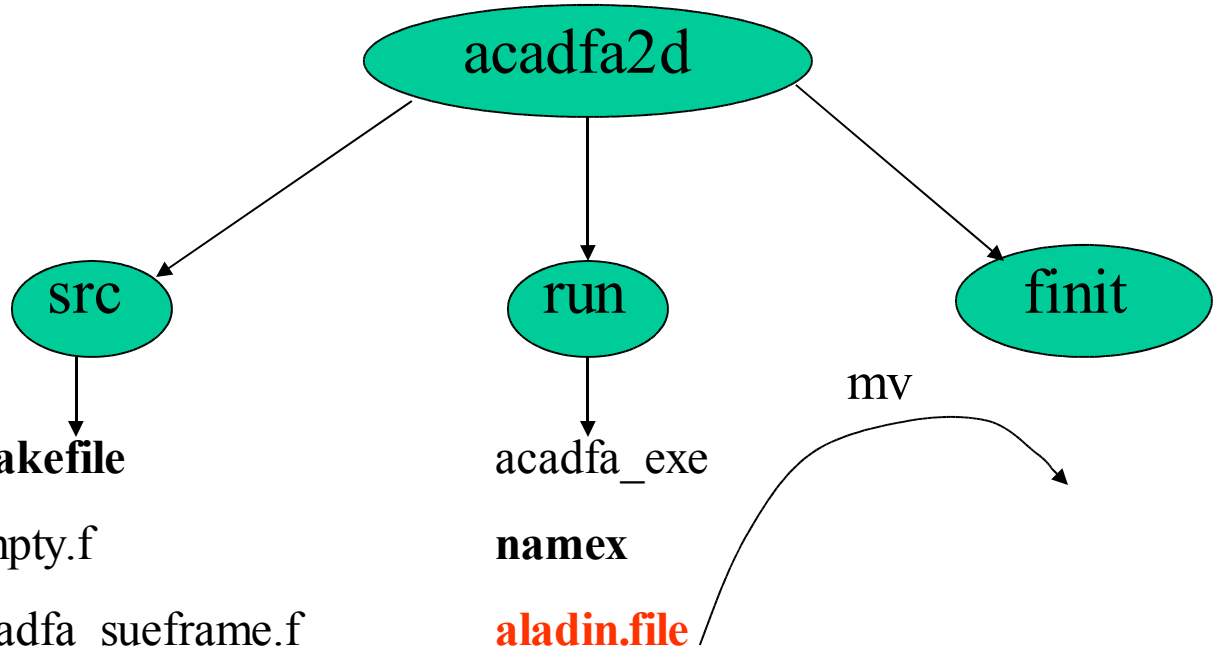
ZQ00 = reference humidity

Academic 2D cases - Preparation Initial File (5/6)

*Description of the different steps in **acadfa_main.f** :*

3. Set up internal constants
4. Read the namelist
5. Set up namelist-deductible variables (P, T, orography)
6. Prepare Output file (define frame, open file, write arbitrary date)
7. Write grid-point data (FAIENC) (geopotentiel, albedo, emissivity, etc…)
8. Write 2D spectral data (orography)
9. Write 3D spectral data (u,v,T, q, NH)

Academic 2D cases - Preparation Initial File (6/6)

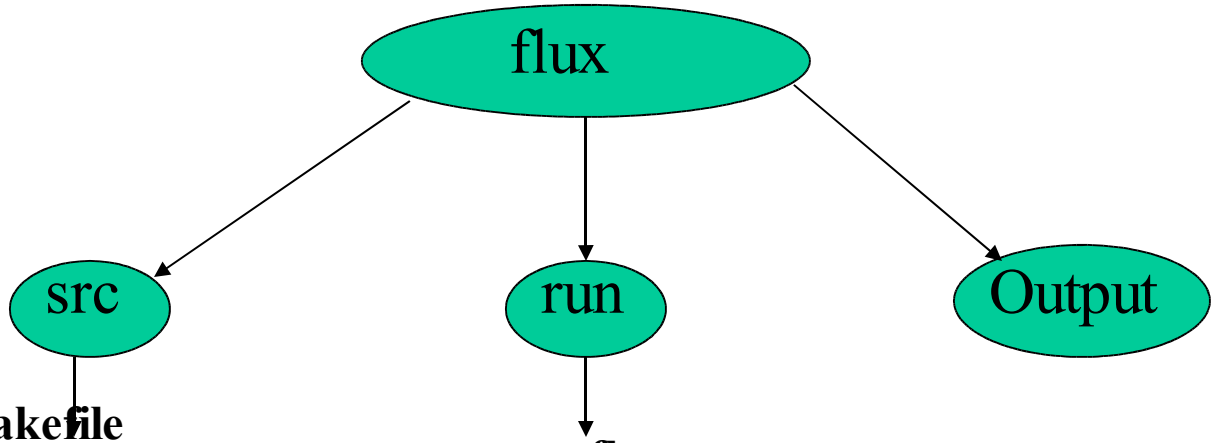


frodo aladin.file gives some informations concerning the content of the file

Academic 2D cases - Run *(1/1)*

Exemple of script on slide :

Academic 2D cases – Post processing (1/2)



Makefile

flux

flux.f90
setup_modules.f90
vvel.f90

lsc.f90
spec2real.f90
write_1d.f90

real2spec.f90
specder.f90
write_2d.f90

run_flux

namflux

```
lzoom  = .FALSE.  ! switch for zoom
nx1    =    1     ! first gridpoint of zoomed area
nx2    = 1000     ! last gridpoint of zoomed area
nz1    =    1     ! first layer of zoomed area
nz2    = 1000     ! last layer of zoomed area
cpref  = 'data_'  ! prefix of output files
csuff  = '.gmt'   ! suffix of output files
cxunit = ''       ! units for x-coordinate
czunit = 'm'      ! units for z-coordinate
```

Academic 2D cases – Post processing *(1/2)*

Input : ICMSHXXXX+HHHH

Output : XXXX+HHHH_T.gmt for Temperature with the format

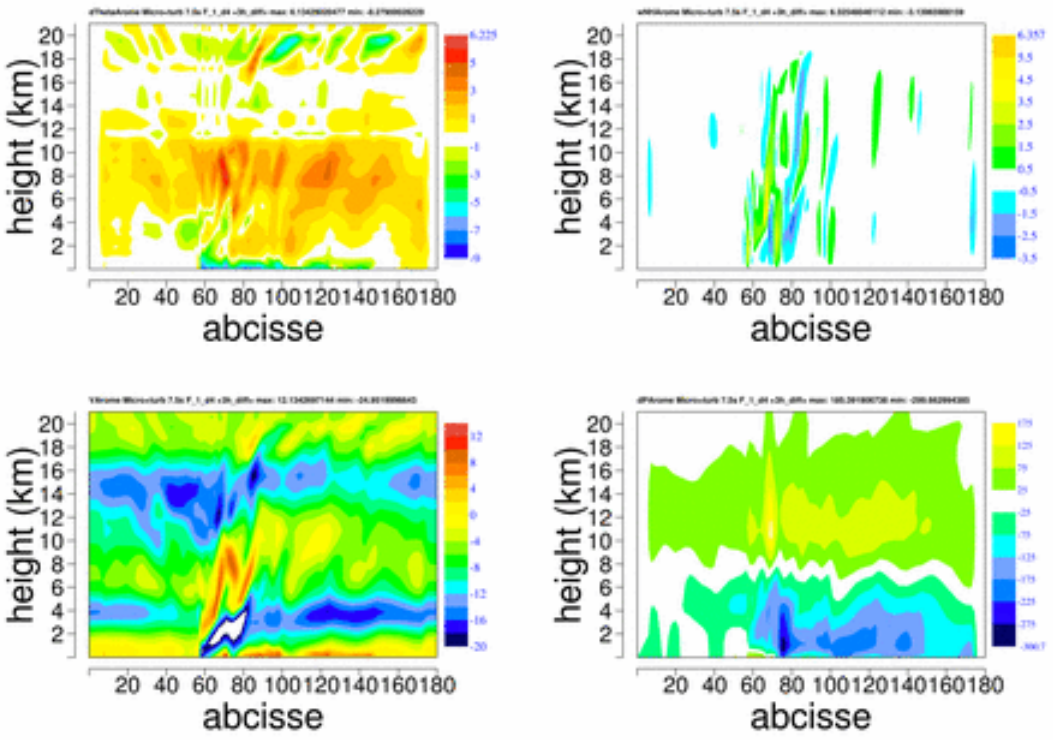
x, z, T(x,z)

Once run_flux modified,

type: ***run_flux XXXX***

Plot with your favourite

software



Real cases

I. Preparation of the initial and coupling files

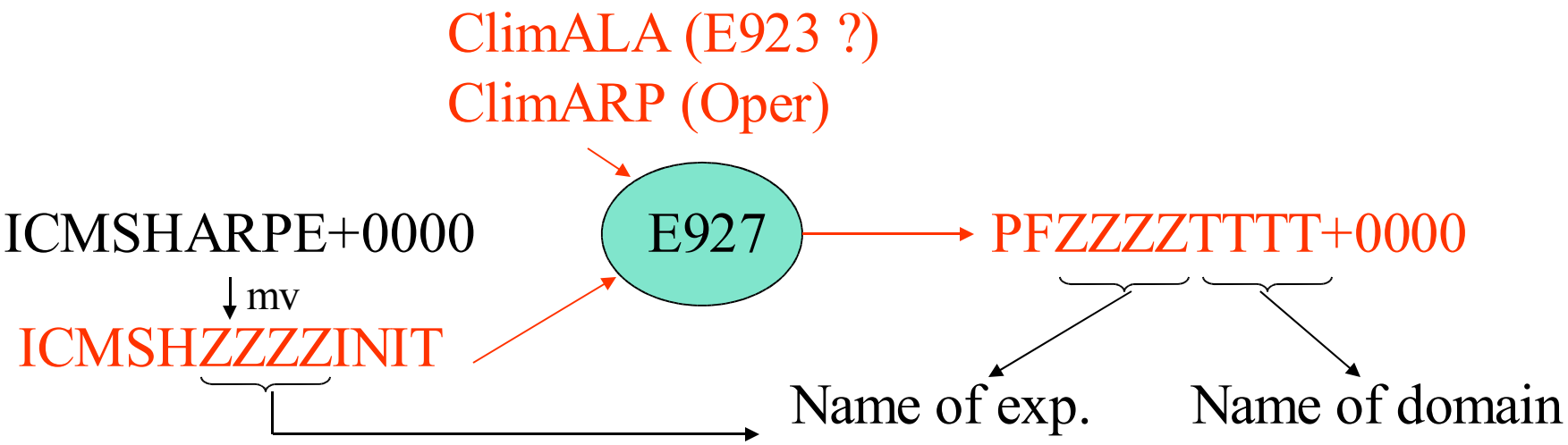
III. Run

V. Post processing

Real cases

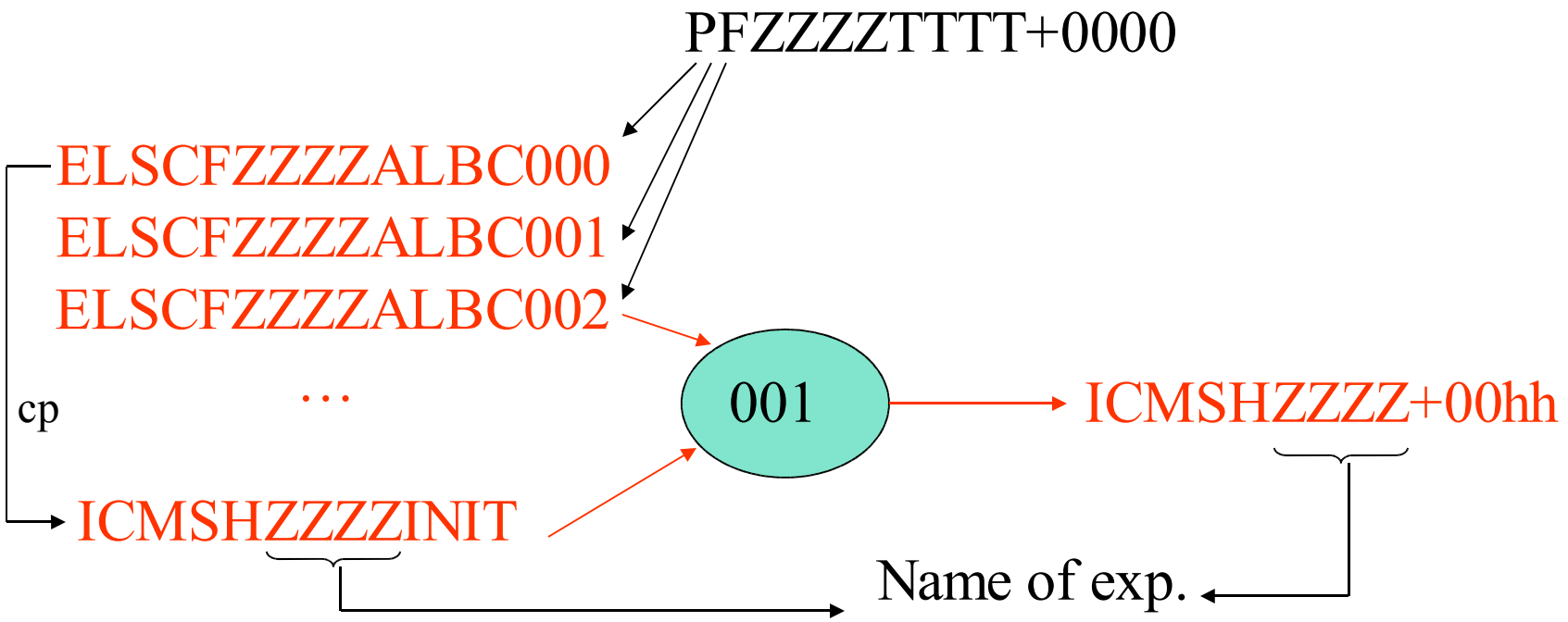
I. Preparation of the initial and coupling files

E927 (or EE927)



Real cases

II. Run (Conf 001)



Real cases

I. Post Processing

http://www.cnrm.meteo.fr/aladin/MODELES/MOD/FULLPOS/