Interpola

v3.0

Generated by Doxygen 1.8.18

1 Interpola 1

1.1 Mass conservative interpolation in overlaping grids . . . 2

2 Modules Index 7

2.1 Modules List . . . 7

3 File Index 9

3.1 File List . . . 9

4 Module Documentation 11

4.1 vars_dat Module Reference . . . 11

4.1.1 Detailed Description . . . 14

4.1.2 Variable Documentation . . . 14

4.1.2.1 cday . . . 14

4.1.2.2 cenlat . . . 14

4.1.2.3 cenlon . . . 15

4.1.2.4 cname . . . 15

4.1.2.5 cunits . . . 15

4.1.2.6 current_date . . . 15

4.1.2.7 dix . . . 15

4.1.2.8 djx . . . 15

4.1.2.9 dlat . . . 16

4.1.2.10 dlon . . . 16

4.1.2.11 dpob . . . 16

4.1.2.12 dx . . . 16

4.1.2.13 dxe . . . 16

4.1.2.14 dy . . . 16

4.1.2.15 dye . . . 17

4.1.2.16 ed . . . 17

4.1.2.17 ei . . . 17

4.1.2.18 eix . . . 17

4.1.2.19 ejx . . . 17

4.1.2.20 elat . . . 17

4.1.2.21 elon . . . 18

4.1.2.22 ename . . . 18

4.1.2.23 epob . . . 18

4.1.2.24 gmt . . . 18

4.1.2.25 grid_id . . . 18

4.1.2.26 isice . . . 18

4.1.2.27 islake . . . 19

4.1.2.28 isoilwater . . . 19
4.1.2.29 isurban . . . 19
4.1.2.30 iswater . . . 19
4.1.2.31 itime . . . 19
4.1.2.32 julday . . . 19
4.1.2.33 julyr . . . 20
4.1.2.34 map_proj_char . . . 20
4.1.2.35 mapproj . . . 20
4.1.2.36 mecha . . . 20
4.1.2.37 mminlu . . . 20
4.1.2.38 moadcenlat . . . 20
4.1.2.39 ndims . . . 21
4.1.2.40 nh . . . 21
4.1.2.41 num_land_cat . . . 21
4.1.2.42 pollat . . . 21
4.1.2.43 pollon . . . 21
4.1.2.44 radm . . . 21
4.1.2.45 sdim . . . 22
4.1.2.46 stdlon . . . 22
4.1.2.47 times . . . 22
4.1.2.48 title . . . 22
4.1.2.49 tpob . . . 22
4.1.2.50 trulat1 . . . 22
4.1.2.51 trulat2 . . . 23
4.1.2.52 tvar . . . 23
4.1.2.53 unlimdimid . . . 23
4.1.2.54 xlat . . . 23
4.1.2.55 xlats . . . 23
4.1.2.56 xlon . . . 23
4.1.2.57 xlons . . . 24
4.1.2.58 zlev . . . 24

5 File Documentation **25**

5.1 calculos.F90 File Reference . . . 25
5.1.1 Function/Subroutine Documentation . . . 25
5.1.1.1 conversion() . . . 25
5.2 Interpola.F90 File Reference . . . 26
5.2.1 Function/Subroutine Documentation . . . 26
5.2.1.1 interpola() . . . 26

5.3 lee_files.F90 File Reference 27
5.3.1 Function/Subroutine Documentation 27
5.3.1.1 check() 27
5.3.1.2 file_reading() 27
5.4 README.md File Reference 28
5.5 salidas.F90 File Reference 28
5.5.1 Function/Subroutine Documentation 28
5.5.1.1 crea_attr() 28
5.5.1.2 file_out() 29
5.6 vars_dat_mod.F90 File Reference 29

Index **33**

Chapter 1

Interpola

Emission Interpolation to a new mesh by using a conservative flux method

The new mesh is provided by the wrfinput file and the original grid with emissions are provided from wrfchem file

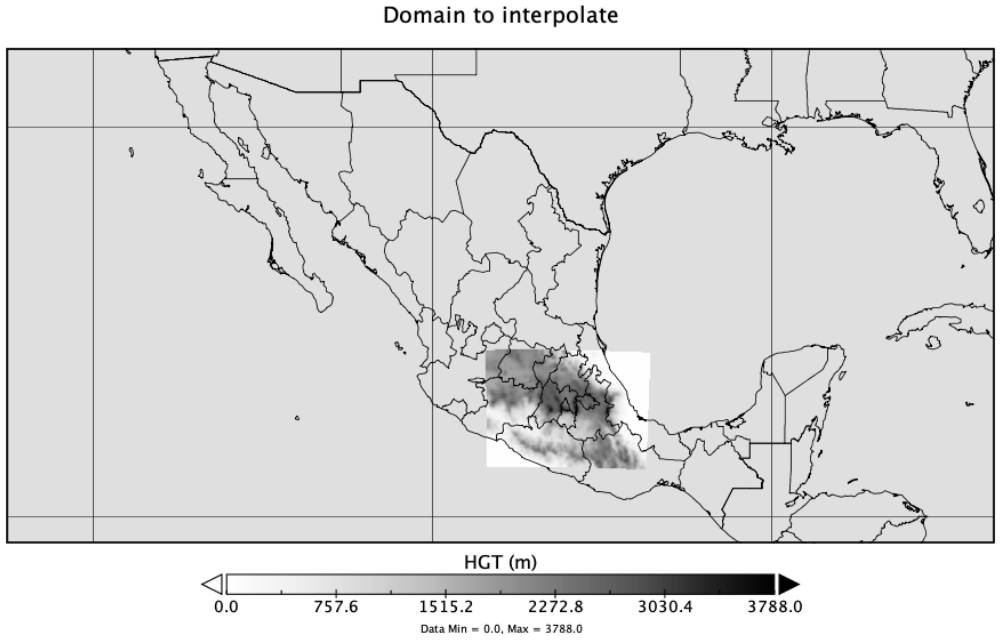
input files:

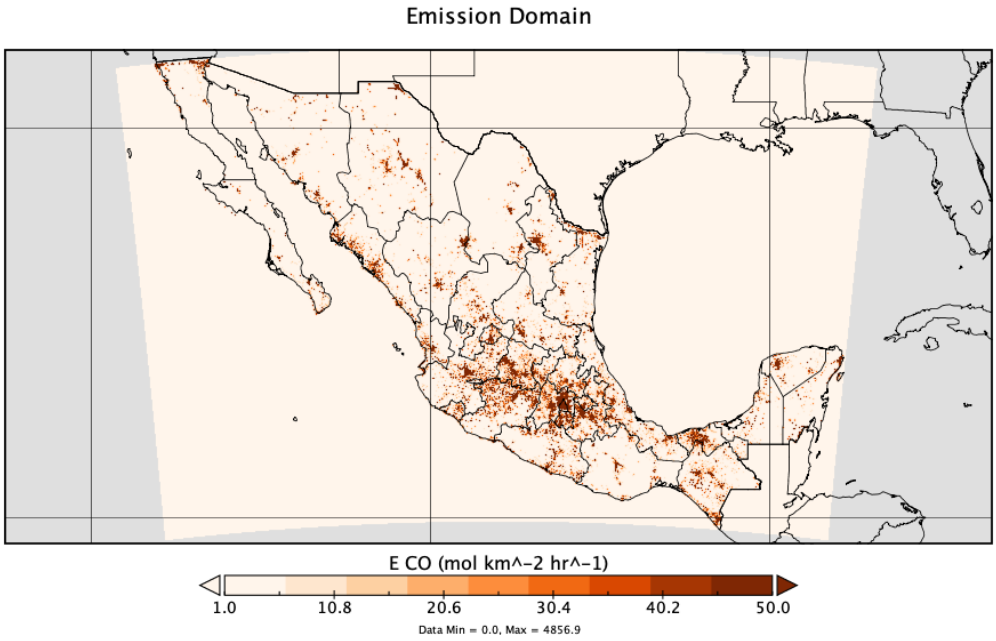
```
wrfchemin.nc  ! A 12 hours emission file to be interpolated (0 to 11 hour or 12 to 23 hour)
wrfinput      ! Domain where emissions will be interpolated can be a ge_em.d0?.nc file but the name shoul
```

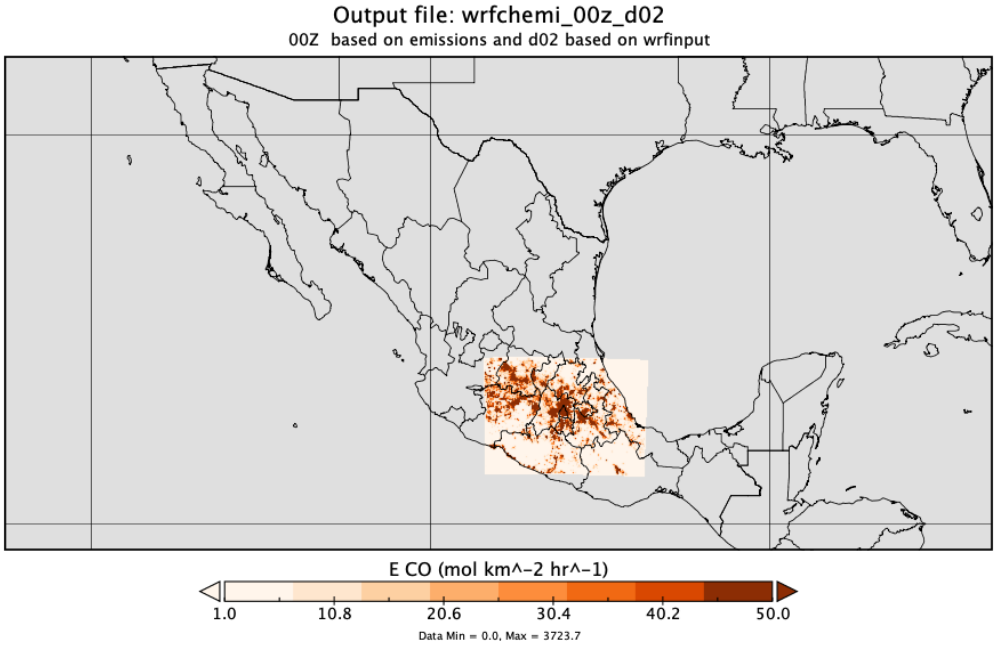
output file:

```
wrfchemi_00z_d01 or wrfchemi_12z_d01 ! 00z or 12z based on emissions file.
                                     ! d01, d02,... and date based on wrfinput
                                     ! for ge_em.d0?.nc the dates are provided from wrfchemin.nc
```

wrfchemin.nc - file contain emissions starting with "E_"

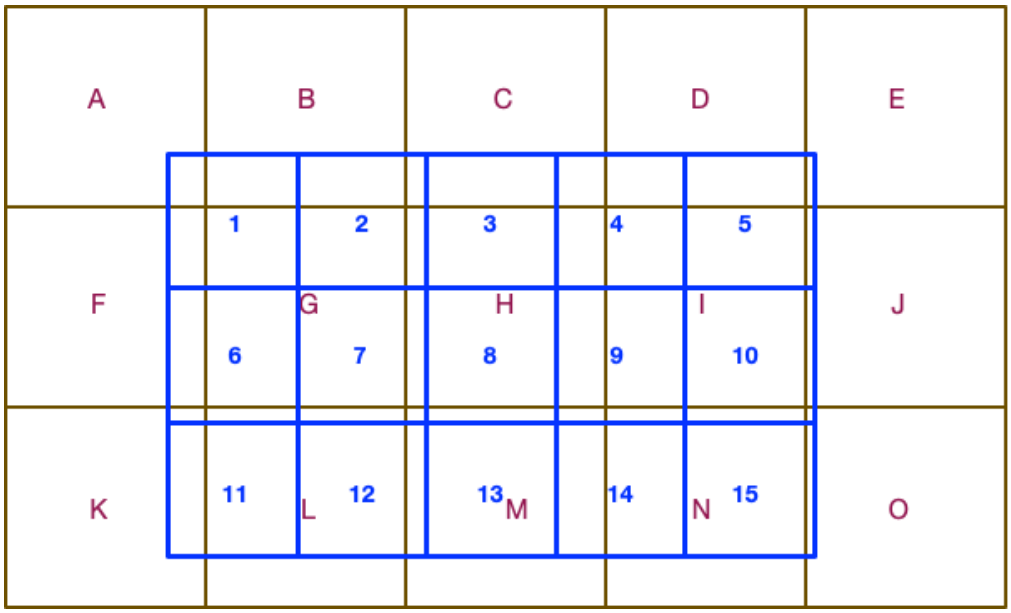






1.1 Mass conservative interpolation in overlaping grids

Emissions Inventories are generatred for represent global, regional or local emissions, air quality models domains are displayed in a different grid (dimensions and location) than the emissions. On other hand, emissions are a flux and it is necesary to use a mass conservative interpolation in order to avoid inconsistencies in the emissions. An example of overlaping grids is presented in the followgin figure.

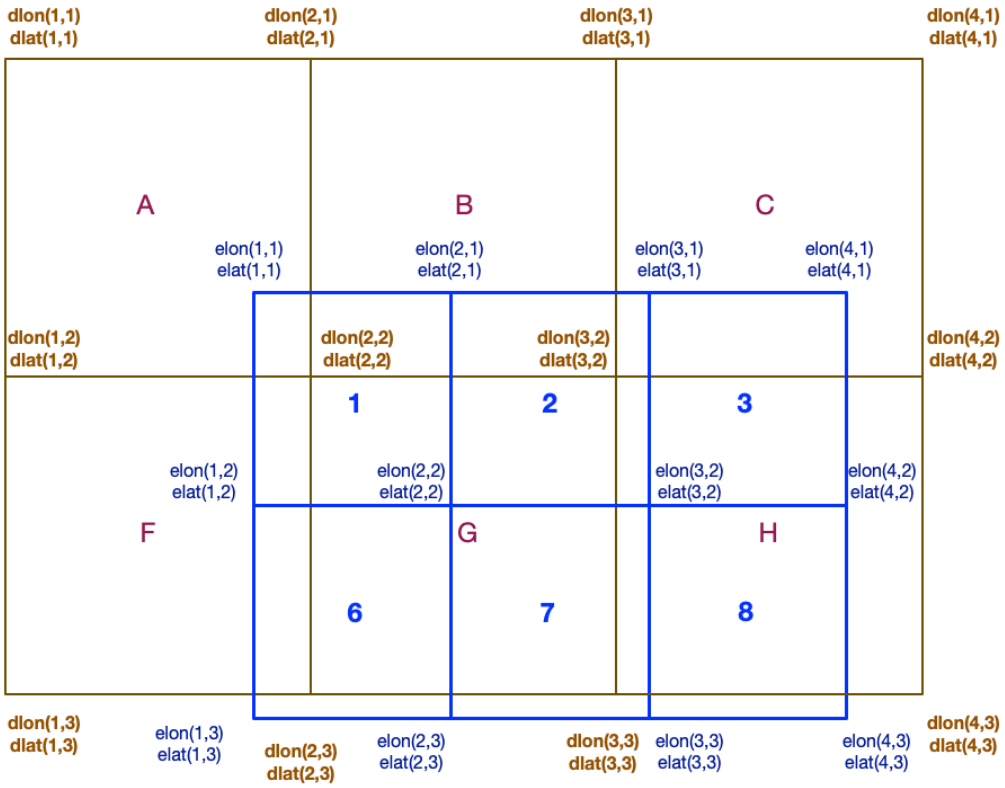


Grid with letters represents the new domain (it has coordinates dlat,dlon) and grid with numbers is the emissions (it has coordinates elat,elon). For N values in emission there are N+1 coordinates in each axis.

For the new domain to interpolate the emissions the following variables are set (when usign coordinates centred in the cell):

New domain	Emissions domain	Stagged
`ylat1=dlat(i ,j )`	`elat1= elat(ii,jj)`	
`ylat2=dlat(i,j+1)`	`elat2= elat(ii,jj+1)`	stagged lat
`xlon1=dlon(i ,j)`	`elon1= elon(ii,jj)`	
`xlon2=dlon(i+1,j)`	`elon2= elon(ii+1,jj)`	stagged long

The following figure presents the locations of the coordinates in each mesh.

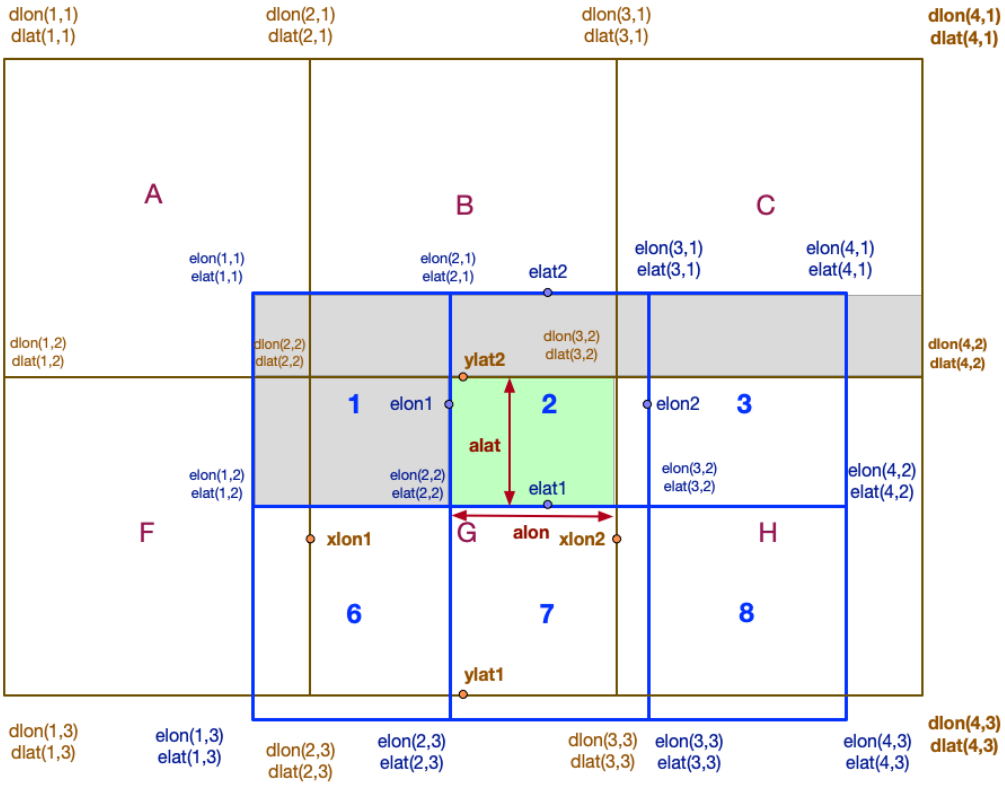


In order to obtain the overlaped areas the following conditionals has to be evaluated:

```
if(ylat1 .le. elat2 .and. ylat2 .ge. elat1) then
   alat=(min(ylat2,elat2)-max(ylat1,elat1))/(elat2-elat1)
end if
if(xlon1 .le. elon2 .and. xlon2 .ge. elon1)  then
   alon=(min(xlon2,elon2)-max(xlon1,elon1))/(elon2-elon1)
end if
```

The following procedure is followed in order to allocate the emissions in the new grid:

```
 alat=(min(ylat2,elat2)-max(ylat1,elat1))
 alon=(min(xlon2,elon2)-max(xlon1,elon1))
 area=max(0.,alat*alon)
```



Emissions in cell **A** are a flux emission fraction from 1, for **B** a flux fractions from 1 and 2, and for **C** fluxes from 2, 3 and 4 (not shown here), **F** fluxes from 1 and 6, **G** from 1, 2, 6 and 7 and **H** from 2, 3, 7, 8, 4 and 9 (not shown here), and so on.

Chapter 2

Modules Index

2.1 Modules List

Here is a list of all modules with brief descriptions:

vars_dat
Set up variables for the mass conservative interpolation process 11

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

calculos.F90 25
Interpola.F90 26
lee_files.F90 27
salidas.F90 28
vars_dat_mod.F90 29

Chapter 4

Module Documentation

4.1 vars_dat Module Reference

Set up variables for the mass conservative interpolation process.

Variables

- integer, parameter nh =24

  nh Number of hours during the day
- integer ndims

  Number of dimension in wrfinput file.
- integer zlev

  Number of emissions layers (1 to 8)
- integer radm =0

  number of emissions classes
- real, dimension(:,:,:,:,:), allocatable ei

  emissions input file dimensions `nx, ny,level, nh, radm`
- real, dimension(:,:,:,:,:), allocatable ed

  emissions in new DOMAIN file dimensions `nx, ny,level, nh, radm`
- real, dimension(:,:), allocatable elat

  Latitudes from input file emissions.
- real, dimension(:,:), allocatable elon

  Longitudes from input file emissions.
- real, dimension(:,:), allocatable epob

  Density population from input file emissions.
- real, dimension(:,:), allocatable dlat

  Latitudes in new domain `nx, ny` *from new domain* `ed`.
- real, dimension(:,:), allocatable dlon

  Longitudes in new domain `nx, ny` *from new domain* `ed`.
- real, dimension(:,:), allocatable dpob

  Density population in new domain `nx, ny` *from new domain* `ed`.

- real, dimension(:,:,:), allocatable xlon

  Longitudes in emissions domain `nx, ny`.
- real, dimension(:,:,:), allocatable xlons

  Longitudes staged in emissions domain `nxs, ny`.
- real, dimension(:,:,:), allocatable xlat

  Latitudes in emissions domain `nx, ny`.
- real, dimension(:,:,:), allocatable xlats

  Latitudes staged in emissions domain `nx, nys`.
- integer dix

  Number of values in longitude in new file.
- integer djx

  Number of values in latitude in new file.
- integer eix

  Number of values in longitude in emissions file.
- integer ejx

  Number of values in latitude in emissions file.
- integer grid_id

  Domain number (d01, d02, etc.) from wrfinput.
- integer julyr

  Julian year in emissions file.
- integer julday

  Julian day in emissions file.
- integer mapproj

  Map projection type.
- integer iswater

  Value for land use water.
- integer islake

  Value for land use lake.
- integer isice

  Value for land use ice.
- integer isurban

  Value for land use urban.
- integer isoilwater

  Value for land use ice.
- integer unlimdimid

  ID unlimit variable (time)
- real cenlat

  Central latitude.
- real cenlon

  Central longitude.
- real dx

  Grid dimension in m output file x.
- real dy

  Grid dimension in m output file y.
- real dxe

  Grid dimension in m emissions file x.
- real dye

Grid dimension in m emissions file y.

- real trulat1

  True latitud lower.

- real trulat2

  True latitud higer.

- real moadcenlat

  Mother of all domains center latitude.

- real stdlon

  Standard longitude.

- real pollat

  The pole latitude.

- real pollon

  The pole longitude.

- real gmt

  GMT time.

- real num_land_cat

  Number of land categories.

- character(len=3) cday

  Day type (lun, mar, mie, jue, vie, sab, dom)

- character(len=19) mminlu

  Land use input description.

- character(len=19) map_proj_char

  Map projection description.

- character(len=19) itime

  Counter for time in file.

- character(len=38) title

  Title description input/output files for V4 should have V4.0.

- character(len=19), dimension(1, 1) times

  Start date in input emissions file.

- character(len=19) current_date

  Current date in input emissions file.

- character(len=19) mecha

  Chemical mechanism name.

- character(len=19), dimension(:), allocatable sdim

  Vector of dimensions descriptions.

- character(len=11), dimension(:), allocatable ename

  Emissions description long.

- character(len=50), dimension(:), allocatable cname

  Emissions name variable short.

- character(len=50), dimension(:), allocatable cunits

  Units in emissions vars.

- logical, dimension(:), allocatable tvar

  true if input var is an emissions variable

- logical tpob

  true if input emissions files contains density population

4.1.1 Detailed Description

Set up variables for the mass conservative interpolation process.

Author

Jose Agustin Garcia Reynoso

Date

07/01/2020, 08/28/2012.

Version

3.0

Copyright

Universidad Nacional Autonoma de Mexico.

Emissions Inventories Variables

4.1.2 Variable Documentation

4.1.2.1 cday

```
character(len=3) vars_dat::cday
```

Day type (lun, mar, mie, jue, vie, sab, dom)

4.1.2.2 cenlat

```
real vars_dat::cenlat
```

Central latitude.

4.1.2.3 cenlon

```
real vars_dat::cenlon
```

Central longitude.

4.1.2.4 cname

```
character(len=50), dimension(:), allocatable vars_dat::cname
```

Emissions name variable short.

4.1.2.5 cunits

```
character(len=50), dimension(:), allocatable vars_dat::cunits
```

Units in emissions vars.

4.1.2.6 current_date

```
character (len=19) vars_dat::current_date
```

Current date in input emissions file.

4.1.2.7 dix

```
integer vars_dat::dix
```

Number of values in longitude in new file.

4.1.2.8 djx

```
integer vars_dat::djx
```

Number of values in latitude in new file.

4.1.2.9 dlat

```
real, dimension(:,:), allocatable vars_dat::dlat
```

Latitudes in new domain `nx`, `ny` from new domain `ed`.

4.1.2.10 dlon

```
real, dimension(:,:), allocatable vars_dat::dlon
```

Longitudes in new domain `nx`, `ny` from new domain `ed`.

4.1.2.11 dpob

```
real, dimension(:,:), allocatable vars_dat::dpob
```

Density population in new domain `nx`, `ny` from new domain `ed`.

4.1.2.12 dx

```
real vars_dat::dx
```

Grid dimension in m output file *x*.

4.1.2.13 dxe

```
real vars_dat::dxe
```

Grid dimension in m emissions file *x*.

4.1.2.14 dy

```
real vars_dat::dy
```

Grid dimension in m output file *y*.

4.1.2.15 dye

```
real vars_dat::dye
```

Grid dimension in m emissions file *y*.

4.1.2.16 ed

```
real, dimension(:,:,:,:,:), allocatable vars_dat::ed
```

emissions in new DOMAIN file dimensions `nx`, `ny`,`level`, `nh`, `radm`

4.1.2.17 ei

```
real, dimension(:,:,:,:,:), allocatable vars_dat::ei
```

emissions input file dimensions `nx`, `ny`,`level`, `nh`, `radm`

4.1.2.18 eix

```
integer vars_dat::eix
```

Number of values in longitude in emissions file.

4.1.2.19 ejx

```
integer vars_dat::ejx
```

Number of values in latitude in emissions file.

4.1.2.20 elat

```
real, dimension(:,:), allocatable vars_dat::elat
```

Latitudes from input file emissions.

4.1.2.21 elon

```
real, dimension(:,:), allocatable vars_dat::elon
```

Longitudes from input file emissions.

4.1.2.22 ename

```
character(len=11), dimension(:), allocatable vars_dat::ename
```

Emissions description long.

4.1.2.23 epob

```
real, dimension(:,:), allocatable vars_dat::epob
```

Density population from input file emissions.

4.1.2.24 gmt

```
real vars_dat::gmt
```

GMT time.

4.1.2.25 grid_id

```
integer vars_dat::grid_id
```

Domain number (d01, d02, etc.) from wrfinput.

4.1.2.26 isice

```
integer vars_dat::isice
```

Value for land use ice.

4.1.2.27 islake

```
integer vars_dat::islake
```

Value for land use lake.

4.1.2.28 isoilwater

```
integer vars_dat::isoilwater
```

Value for land use ice.

4.1.2.29 isurban

```
integer vars_dat::isurban
```

Value for land use urban.

4.1.2.30 iswater

```
integer vars_dat::iswater
```

Value for land use water.

4.1.2.31 itime

```
character(len=19) vars_dat::itime
```

Counter for time in file.

4.1.2.32 julday

```
integer vars_dat::julday
```

Julian day in emissions file.

4.1.2.33 julyr

```
integer vars_dat::julyr
```

Julian year in emissions file.

4.1.2.34 map_proj_char

```
character(len=19) vars_dat::map_proj_char
```

Map projection description.

4.1.2.35 mapproj

```
integer vars_dat::mapproj
```

Map projection type.

4.1.2.36 mecha

```
character (len=19) vars_dat::mecha
```

Chemical mechanism name.

4.1.2.37 mminlu

```
character(len=19) vars_dat::mminlu
```

Land use input description.

4.1.2.38 moadcenlat

```
real vars_dat::moadcenlat
```

Mother of all domains center latitude.

4.1.2.39 ndims

```
integer vars_dat::ndims
```

Number of dimension in wrfinput file.

4.1.2.40 nh

```
integer, parameter vars_dat::nh =24
```

nh Number of hours during the day

4.1.2.41 num_land_cat

```
real vars_dat::num_land_cat
```

Number of land categories.

4.1.2.42 pollat

```
real vars_dat::pollat
```

The pole latitude.

4.1.2.43 pollon

```
real vars_dat::pollon
```

The pole longitude.

4.1.2.44 radm

```
integer vars_dat::radm =0
```

number of emissions classes

4.1.2.45 sdim

```
character (len=19), dimension(:), allocatable vars_dat::sdim
```

Vector of dimensions descriptions.

4.1.2.46 stdlon

```
real vars_dat::stdlon
```

Standard longitude.

4.1.2.47 times

```
character(len=19), dimension(1,1) vars_dat::times
```

Start date in input emissions file.

4.1.2.48 title

```
character(len=38) vars_dat::title
```

Title description input/output files for V4 should have V4.0.

4.1.2.49 tpob

```
logical vars_dat::tpob
```

true if input emissions files contains density population

4.1.2.50 trulat1

```
real vars_dat::trulat1
```

True latitud lower.

4.1.2.51 trulat2

```
real vars_dat::trulat2
```

True latitud higer.

4.1.2.52 tvar

```
logical, dimension(:), allocatable vars_dat::tvar
```

true if input var is an emissions variable

4.1.2.53 unlimdimid

```
integer vars_dat::unlimdimid
```

ID unlimit variable (time)

4.1.2.54 xlat

```
real, dimension(:,:,:), allocatable vars_dat::xlat
```

Latitudes in emissions domain `nx`, `ny`.

4.1.2.55 xlats

```
real, dimension(:,:,:), allocatable vars_dat::xlats
```

Latitudes staged in emissions domain `nx`, `nys`.

4.1.2.56 xlon

```
real, dimension(:,:,:), allocatable vars_dat::xlon
```

Longitudes in emissions domain `nx`, `ny`.

4.1.2.57 xlons

```
real, dimension(:,:,:), allocatable vars_dat::xlons
```

Longitudes staged in emissions domain `nxs`, `ny`.

4.1.2.58 zlev

```
integer vars_dat::zlev
```

Number of emissions layers (1 to 8)

Chapter 5

File Documentation

5.1 calculos.F90 File Reference

Functions/Subroutines

- subroutine conversion

  It does the interpolation into the new Mesh.

5.1.1 Function/Subroutine Documentation

5.1.1.1 conversion()

```
subroutine conversion
```

It does the interpolation into the new Mesh.

Interpolates the emissions into new mesh conserving mass uses emission area and the fractional area between the original and new grid to set the emissions.

Computes the mass in the original mesh and compares against the new mesh, if both domains cover the same area the ratio `xemis/ xmas` should be 1

Author

Jose Agustin Garcia Reynoso

Date

07/01/2020, 08/28/2012.

Version

3.0

hours in a day

5.2 Interpola.F90 File Reference

Functions/Subroutines

- program interpola

  Conservative emission interpolation from one mesh to a new mesh.

5.2.1 Function/Subroutine Documentation

5.2.1.1 interpola()

```
program interpola
```

Conservative emission interpolation from one mesh to a new mesh.

Reads emissions from a wrfchemin file and interpolates to a new mesh provided from wrfinput.

Contains a call for tree subroutines that completes the procedure

file_reading

Reads Emission inventory and the mesh to interpolate.

conversion

Computations for emissions mass conservation into the new mesh.

file_out

Create output file and write results

Author

Jose Agustin Garcia Reynoso

Date

2012/06/20

Version

3.0

Copyright

Universidad Nacional Autonoma de Mexico 2020

5.3 lee_files.F90 File Reference

Functions/Subroutines

- subroutine file_reading

  Reads Emission inventory and the new Mesh to interpolate emissions.
- subroutine check (status)

  Evaluation of netcdf status.

5.3.1 Function/Subroutine Documentation

5.3.1.1 check()

```
subroutine check (
             integer, intent(in) status )
```

Evaluation of netcdf status.

In case of error prints error message description

Parameters

status	An error status that might have been returned from a previous call to some netCDF function

Date

08/28/2012

Version

1.0

5.3.1.2 file_reading()

```
subroutine file_reading
```

Reads Emission inventory and the new Mesh to interpolate emissions.

Reads from the emission wrfchemin file the variables and attributes put emissions in `ei` array and coordinates in `xlat`, `xlon`.

reads the new mesh from wrfinput, stores the new coordinates `dlat`, `dlon`

Author

Agustin Garcia

Date

07/01/2020, 08/28/2012.

Version

3.0

Copyright

Universidad Nacional Autonoma de Mexico.

5.4 README.md File Reference

5.5 salidas.F90 File Reference

Functions/Subroutines

- subroutine file_out

  file_out creates the output file and writes the interpolated emissions from the new mesh Uses the attributes from wrfinput file
- subroutine crea_attr (ncid, idm, dimids, svar, cname, cunits, id_var)

  creates attributes for gas variables and aerosol variables

5.5.1 Function/Subroutine Documentation

5.5.1.1 crea_attr()

```
subroutine file_out::crea_attr (
             integer, intent(in) ncid,
             integer, intent(in) idm,
             integer, dimension(idm), intent(in) dimids,
             character(len=*), intent(in) svar,
             character(len=*), intent(in) cname,
             character(len=*), intent(in) cunits,
             integer, intent(out) id_var )
```

creates attributes for gas variables and aerosol variables

Author

Agustin Garcia

Date

28/08/2012

Parameters

in	*ncid*	netCDF ID, from a previous call to NF90_OPEN or NF90_CREATE
in	*idm*	Number of dimensions in dimids
out	*id_var*	ID from variable to store
in	*dimids*	Array with ID for each dimension
in	*svar*	Short name of variable to store
in	*cname*	Description of variable to store
in	*cunits*	Units for variable to store

5.5.1.2 file_out()

```
subroutine file_out
```

file_out creates the output file and writes the interpolated emissions from the new mesh Uses the attributes from wrfinput file

Uses current_date from wrfinput file

if geo_em_d0?.nc file is used the date comes from wrfchemin.nc

Author

Agustin Garcia

Date

07/01/2020, 08/28/2012.

Version

3.0

Copyright

Universidad Nacional Autonoma de Mexico.

5.6 vars_dat_mod.F90 File Reference

Modules

- module vars_dat

  Set up variables for the mass conservative interpolation process.

Variables

- integer, parameter vars_dat::nh =24

  nh Number of hours during the day
- integer vars_dat::ndims

  Number of dimension in wrfinput file.
- integer vars_dat::zlev

  Number of emissions layers (1 to 8)
- integer vars_dat::radm =0

  number of emissions classes
- real, dimension(:,:,:,:,:), allocatable vars_dat::ei

  emissions input file dimensions `nx, ny,level, nh, radm`
- real, dimension(:,:,:,:,:), allocatable vars_dat::ed

  emissions in new DOMAIN file dimensions `nx, ny,level, nh, radm`
- real, dimension(:,:), allocatable vars_dat::elat

  Latitudes from input file emissions.
- real, dimension(:,:), allocatable vars_dat::elon

  Longitudes from input file emissions.
- real, dimension(:,:), allocatable vars_dat::epob

  Density population from input file emissions.
- real, dimension(:,:), allocatable vars_dat::dlat

  Latitudes in new domain `nx, ny` *from new domain* `ed`.
- real, dimension(:,:), allocatable vars_dat::dlon

  Longitudes in new domain `nx, ny` *from new domain* `ed`.
- real, dimension(:,:), allocatable vars_dat::dpob

  Density population in new domain `nx, ny` *from new domain* `ed`.
- real, dimension(:,:,:), allocatable vars_dat::xlon

  Longitudes in emissions domain `nx, ny`.
- real, dimension(:,:,:), allocatable vars_dat::xlons

  Longitudes staged in emissions domain `nxs, ny`.
- real, dimension(:,:,:), allocatable vars_dat::xlat

  Latitudes in emissions domain `nx, ny`.
- real, dimension(:,:,:), allocatable vars_dat::xlats

  Latitudes staged in emissions domain `nx, nys`.
- integer vars_dat::dix

  Number of values in longitude in new file.
- integer vars_dat::djx

  Number of values in latitude in new file.
- integer vars_dat::eix

  Number of values in longitude in emissions file.
- integer vars_dat::ejx

  Number of values in latitude in emissions file.
- integer vars_dat::grid_id

  Domain number (d01, d02, etc.) from wrfinput.
- integer vars_dat::julyr

  Julian year in emissions file.
- integer vars_dat::julday

Julian day in emissions file.

- integer vars_dat::mapproj

  Map projection type.
- integer vars_dat::iswater

  Value for land use water.
- integer vars_dat::islake

  Value for land use lake.
- integer vars_dat::isice

  Value for land use ice.
- integer vars_dat::isurban

  Value for land use urban.
- integer vars_dat::isoilwater

  Value for land use ice.
- integer vars_dat::unlimdimid

  ID unlimit variable (time)
- real vars_dat::cenlat

  Central latitude.
- real vars_dat::cenlon

  Central longitude.
- real vars_dat::dx

  Grid dimension in m output file x.
- real vars_dat::dy

  Grid dimension in m output file y.
- real vars_dat::dxe

  Grid dimension in m emissions file x.
- real vars_dat::dye

  Grid dimension in m emissions file y.
- real vars_dat::trulat1

  True latitud lower.
- real vars_dat::trulat2

  True latitud higer.
- real vars_dat::moadcenlat

  Mother of all domains center latitude.
- real vars_dat::stdlon

  Standard longitude.
- real vars_dat::pollat

  The pole latitude.
- real vars_dat::pollon

  The pole longitude.
- real vars_dat::gmt

  GMT time.
- real vars_dat::num_land_cat

  Number of land categories.
- character(len=3) vars_dat::cday

  Day type (lun, mar, mie, jue, vie, sab, dom)
- character(len=19) vars_dat::mminlu

  Land use input description.

- character(len=19) vars_dat::map_proj_char

  Map projection description.
- character(len=19) vars_dat::itime

  Counter for time in file.
- character(len=38) vars_dat::title

  Title description input/output files for V4 should have V4.0.
- character(len=19), dimension(1, 1) vars_dat::times

  Start date in input emissions file.
- character(len=19) vars_dat::current_date

  Current date in input emissions file.
- character(len=19) vars_dat::mecha

  Chemical mechanism name.
- character(len=19), dimension(:), allocatable vars_dat::sdim

  Vector of dimensions descriptions.
- character(len=11), dimension(:), allocatable vars_dat::ename

  Emissions description long.
- character(len=50), dimension(:), allocatable vars_dat::cname

  Emissions name variable short.
- character(len=50), dimension(:), allocatable vars_dat::cunits

  Units in emissions vars.
- logical, dimension(:), allocatable vars_dat::tvar

  true if input var is an emissions variable
- logical vars_dat::tpob

  true if input emissions files contains density population

Index

calculos.F90, 25
    conversion, 25
cday
    vars_dat, 14
cenlat
    vars_dat, 14
cenlon
    vars_dat, 14
check
    lee_files.F90, 27
cname
    vars_dat, 15
conversion
    calculos.F90, 25
crea_attr
    salidas.F90, 28
cunits
    vars_dat, 15
current_date
    vars_dat, 15

dix
    vars_dat, 15
djx
    vars_dat, 15
dlat
    vars_dat, 15
dlon
    vars_dat, 16
dpob
    vars_dat, 16
dx
    vars_dat, 16
dxe
    vars_dat, 16
dy
    vars_dat, 16
dye
    vars_dat, 16

ed
    vars_dat, 17
ei
    vars_dat, 17
eix
    vars_dat, 17

ejx
    vars_dat, 17
elat
    vars_dat, 17
elon
    vars_dat, 17
ename
    vars_dat, 18
epob
    vars_dat, 18

file_out
    salidas.F90, 29
file_reading
    lee_files.F90, 27

gmt
    vars_dat, 18
grid_id
    vars_dat, 18

interpola
    Interpola.F90, 26
Interpola.F90, 26
    interpola, 26
isice
    vars_dat, 18
islake
    vars_dat, 18
isoilwater
    vars_dat, 19
isurban
    vars_dat, 19
iswater
    vars_dat, 19
itime
    vars_dat, 19

julday
    vars_dat, 19
julyr
    vars_dat, 19

lee_files.F90, 27
    check, 27
    file_reading, 27

map_proj_char
vars_dat, 20
mapproj
vars_dat, 20
mecha
vars_dat, 20
mminlu
vars_dat, 20
moadcenlat
vars_dat, 20

ndims
vars_dat, 20
nh
vars_dat, 21
num_land_cat
vars_dat, 21

pollat
vars_dat, 21
pollon
vars_dat, 21

radm
vars_dat, 21
README.md, 28

salidas.F90, 28
crea_attr, 28
file_out, 29
sdim
vars_dat, 21
stdlon
vars_dat, 22

times
vars_dat, 22
title
vars_dat, 22
tpob
vars_dat, 22
trulat1
vars_dat, 22
trulat2
vars_dat, 22
tvar
vars_dat, 23

unlimdimid
vars_dat, 23

vars_dat, 11
cday, 14
cenlat, 14
cenlon, 14
cname, 15
cunits, 15
current_date, 15
dix, 15
djx, 15
dlat, 15
dlon, 16
dpob, 16
dx, 16
dxe, 16
dy, 16
dye, 16
ed, 17
ei, 17
eix, 17
ejx, 17
elat, 17
elon, 17
ename, 18
epob, 18
gmt, 18
grid_id, 18
isice, 18
islake, 18
isoilwater, 19
isurban, 19
iswater, 19
itime, 19
julday, 19
julyr, 19
map_proj_char, 20
mapproj, 20
mecha, 20
mminlu, 20
moadcenlat, 20
ndims, 20
nh, 21
num_land_cat, 21
pollat, 21
pollon, 21
radm, 21
sdim, 21
stdlon, 22
times, 22
title, 22
tpob, 22
trulat1, 22
trulat2, 22
tvar, 23
unlimdimid, 23
xlat, 23
xlats, 23
xlon, 23
xlons, 23
zlev, 24

vars_dat_mod.F90, 29

xlat
    vars_dat, 23
xlats
    vars_dat, 23
xlon
    vars_dat, 23
xlons
    vars_dat, 23

zlev
    vars_dat, 24