

## Running Toulouse MALI and Gauss-Seidel codes with gfortran compiler on Linux system

- Download the package source file **mali2D.tgz** (**gauss\_seidel2D.tgz**) from MEDOC website:  
[https://idoc.ias.u-psud.fr/MEDOC/Radiative\\_transfer\\_codes/MALI-GS-2D](https://idoc.ias.u-psud.fr/MEDOC/Radiative_transfer_codes/MALI-GS-2D)

- (**gfortran** compiler is required)

- Unpack the package by typing the following linux command:

```
tar -xvzf mali2D.tgz  
(tar -xvzf gauss_seidel2D.tgz)
```

- Go to the folder mali2D (gauss\_seidel2D):

```
cd mali2D  
(cd gauss_seidel2D)
```

- The **mali2D folder** contains the following files:

populationsCa1d.res, populationsH1d.res, populationsNa1d.res,  
populationsCa.save, populationsNa.save, populationsH.save, input,  
atomCaI5n.f90, atomHI3n.f90, atomicmodel.f90, atomNaI4n.f90, boltzex.f90,  
common.f90, constantes.f90, dopwidth.f90, eincoef.f90, lubksb.f90,  
ludcmp.f90, mali2d.f90, malieqstat.f90, planckf.f90, quadrature.f90, ratio.f90,  
rt2d.f90, seta.f90, setgeo.f90, transitions.f90, compil.pl, launch.pl

- The **gauss\_seidel2D folder** contains the following files:

input, atomCaI5n.f90, atomHI3n.f90, atomicmodel.f90, atomNaI4n.f90,  
boltzex.f90, common.f90, constantes.f90, dopwidth.f90, eincoef.f90,  
gsm2d.f90, gsmeqstat.f90, lubksb.f90, ludcmp.f90, planckf.f90,  
quadrature.f90, ratio.f90, rt2dgs.m.f90, seta.f90, setgeo.f90, transitions.f90,  
compil.pl, launch.pl

- The file to modify is « **input** »

- Run the **MALI** code by typing:

**./compil.pl** (for the first time, compile 2 times in order to create .mod files. The executable file « mali2d.x » is also created)

**./launch.pl** (for the other runs)



The output files for **mali2D** are: mali2d.res, populations2d.res, populations.res

- Run the **GAUSS-SEIDEL** code by typing:  
    **./compil.pl** (for the first time, compile 2 times in order to create .mod files. The executable file « gsm2d.x » is also created)  
    **./launch.pl** (for the other runs)

The output files for **gauss\_seidel2D** are: sor2d.res (if the last parameter of « input » file is 1.0) or gsm2d.res (if the last parameter of « input » file is different of 1.0)

- The folder **results** contains the output files corresponding to a test case to be able to check if your results are good. The MALI « output » file shows what is printed on the screen (convergence monitoring).

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