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

- (**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, rt2dgsm.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 ouput 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 ouput 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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