# Running HYDR_NV with gfortran compiler on Linux system

- Download the package source file HYDR_NV.tgz from MEDOC website :
  https://idoc.ias.u-psud.fr/MEDOC/Radiative transfer codes

- (**gfortran** compiler is required)

- Unpack the package by typing the following linux command :
  **tar -xvzf HYDR_NV.tgz**

- Go to the folder HYDR_NV :
  **cd HYDR_NV**

- The folder contains two cases of atmosphere: solar atmosphere (SUN folder corresponding to VAL3C model) and stellar atmosphere (ALTAIR folder).
  SUN and ALTAIR folders contain the following files :
  makefile, hydr_nv.f90, fort.3 (input file), visu21.f90

- Run the code by typing :
  **make**
  **./hydr_nv**

- The output files are : fort.8 (iteration message), fort.21 (emergent intensities for 3 directions and for each transition line), fort.22 (L$\alpha$ intensities versus frequency and emission angle), fort.24 (atmospheric parameters, electron density $N_e$, hydrogen density $N_H$), fort.28 (mean intensities)

- The folder **results** contains the output files corresponding to a test case (input : fort.3) to be able to check if your results are good

- To visualize the line profiles (fort.21), use the following program visu21.f90 by typing :
  **gfortran -o visu21 visu21.f90**
  **./visu21**
  The output file is **v21.ps**

Martine Chane-Yook