Running PRODOP with gfortran compiler on Linux system

- Download the package source file PRODOP.tgz from MEDOC/TOOLS website
- **gfortran** compiler is required. Type the following linux command:
- **tar -xvzf PRODOP.tgz**
- **cd PRODOP**
- The folder contains the following files: intica.dat (calcium incident intensites (half-profile). 1st column: frequency in Hz, 2nd column: intensities in erg/cm²/s/sr/Hz), intinc_H.dat (hydrogen incident intensites (half-profile). 1st column: wavelengths in Å,, 2nd column: intensities in erg/cm²/s/sr/Hz), intinc_He.dat (helium incident intensites (half-profile). 1st column: frequency in Hz, 2nd column: intensities in erg/cm²/s/sr/Hz), intimg.dat (magnesium incident intensites (half-profile). 1st column: frequency in Hz, 2nd column: intensities in erg/cm²/s/sr/Hz), model.dat, tembri.dat (1st column: wavelengths in microns, 2nd column: brightness temperatures for solar flux, on the entire disk, in K), makefile, prodop.f90, VIPRF.f90
- The file to modify is ``model.dat'': the file contains 2 models defined by temperature (K), pressure (dyn/cm²), thickness of the prominence/filament (km), microturbulence velocity (km/s), altitude of the prominence/filament relative to the sun's surface (km) and bulk velocity (km/s). Depending on the IOEL value (i.e. of the atomic element considered), it will be necessary to adapt the copies of the output files fort.* and to comment on the atomic elements not used in the visualization program VIPRF.f90. Run the code by typing:
- **make**
- **./prodop**
- The output files are, for IOEL=2 : fort.10 (resume.dat), fort.21 (profilh.dat: H profile), fort.51 (profihe.dat: He profile), fort.81 (profica.dat: Ca profile), fort.91 (profimg.dat: Mg profile), fort.20 (fisuphy.dat: H incident intensities), fort.101 (fisupmg.dat: Mg incident intensities)
- cp fort.10 resume.dat
- cp fort.21 profilh.dat
- cp fort.51 profihe.dat
- cp fort.81 profica.dat

- cp fort.91 profimg.dat
- cp fort.20 fisuphy.dat
- cp fort.101 fisupmg.dat

- The folder **results** contains the output files corresponding to test cases to be able to check if your results are good

- To visualize the line profiles, we use the visualization program VIPRF.f90 by typing the following commands (modify in VIPRF.f90 the value of NMDL which is the number of models treated in model.dat):

- **gfortran -o visu VIPRF.f90**
- **./visu**
- The output files are: profica.ps (Ca emergent profile), profihe.ps (He emergent profile), profilh.ps (H emergent profile), proinc.ps (H incident profile), profimg.ps (Mg emergent profile), pincmg.ps (Mg incident profile)

- Before running PRODOP again, type **make clean**

Martine Chane-Yook