RTTOV GUI, the graphical user interface for RTTOV

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RTTOV GUI is the graphical user interface for the radiative transfer model **RTTOV** developed in the context of the NWP-SAF EUMETSAT project.
RTTOV GUI has been part of the RTTOV package since version 11.2.
It allows the user to run the RTTOV direct and Jacobian models and PC-RTTOV (direct and Jacobian) for one atmospheric profile and for all instruments permitted by RTTOV.
It includes an 1D-VAR retrieval functionality.
RTTOV GUI was designed for educational and training purposes.
RTTOV GUI is written in python (2.7) and uses wxPython, numpy, matplotlib, f2py and h5py.
Most windows have the matplotlib toolbar : you can zoom and save the plots.
The interface between RTTOV and RTTOV GUI works with hdf5 files kept in a working directory : you can read those files for a further look at your results.
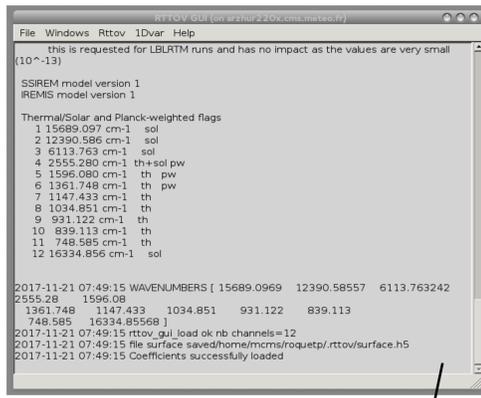
The RTTOV GUI main window :
where you can launch the commands :
1- Open a profile
2- Select coefficient files
3- Run RTTOV direct or K and visualize the log.
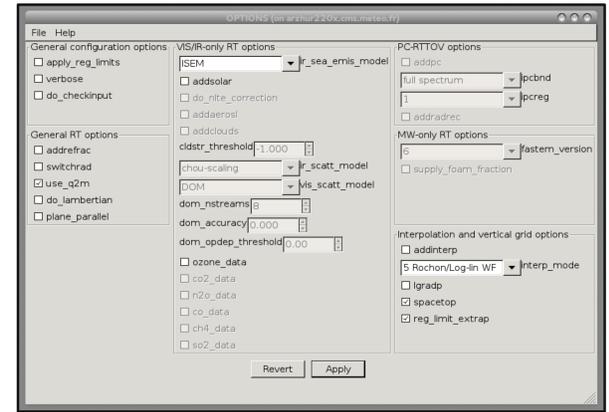
This is the Options window :
where you can change RTTOV options :
Some options can be chosen only with specific conditions. For example, you cannot run RTTOV with CO_2 if the coefficient file has not been made for this gas and if your profile does not contain that gas.
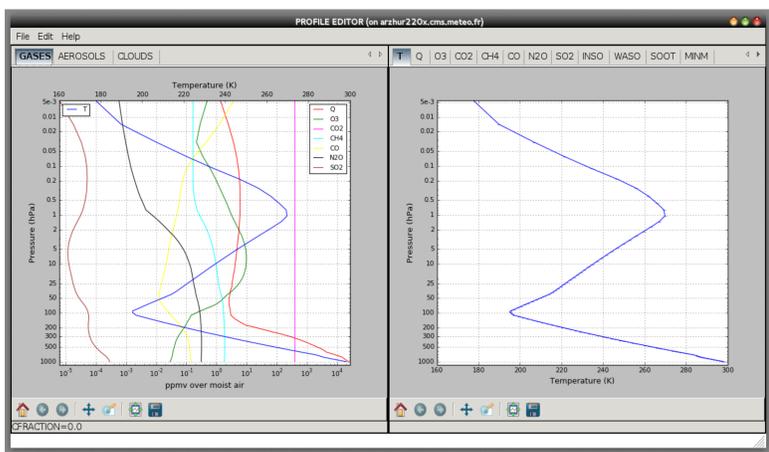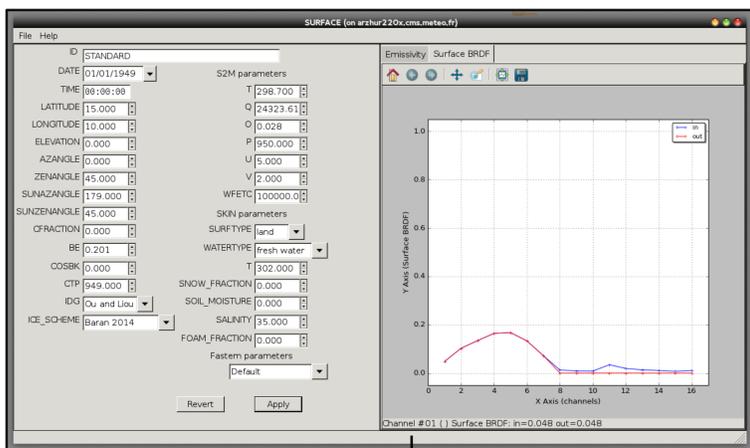
Profile editor window :
You can click on the right panel in order to modify the curve, you can add or remove gases, aerosols or clouds.
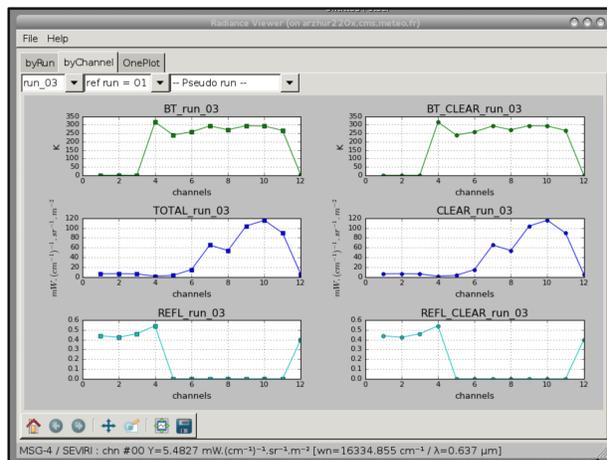
Radiance window : when you run the direct model, RTTOV GUI displays the result of RTTOV in the radiance window, you can visualize radiances, brightness temperatures and reflectances computed by RTTOV and visualize the difference between 2 runs.
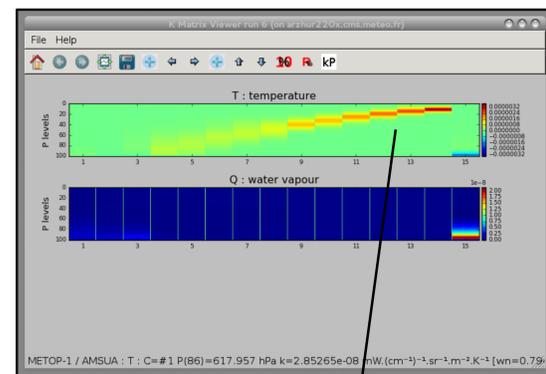
K Matrix window : when you run the K model, RTTOV-GUI displays the **K matrix,** you can also visualize the K profile by selecting a channel (kP button). Here is the K Matrix for AMSU-A: you can see at which level each channel is the most responsive.

Surface editor window :
where you can modify surface parameters, angles and load an emissivity or a BRDF atlas.
This window displays the calculated emissivity and the BRDF.
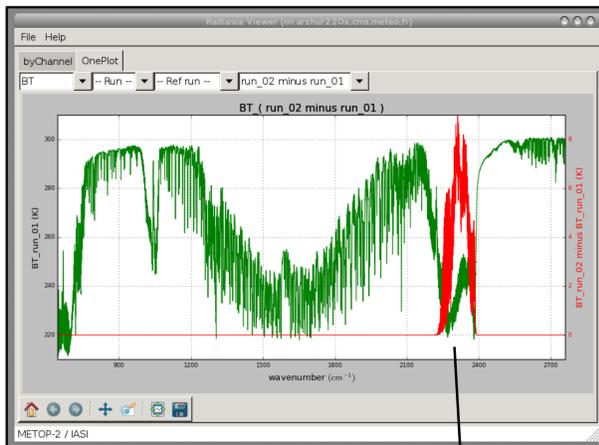
HEY! this is the Radiance window for IASI: for a hyperspectral instrument, RTTOV GUI displays the spectrum in wave numbers. You can compare 2 spectrums, here is the difference in brightness temperatures when you use the NLTE correction: impressive!
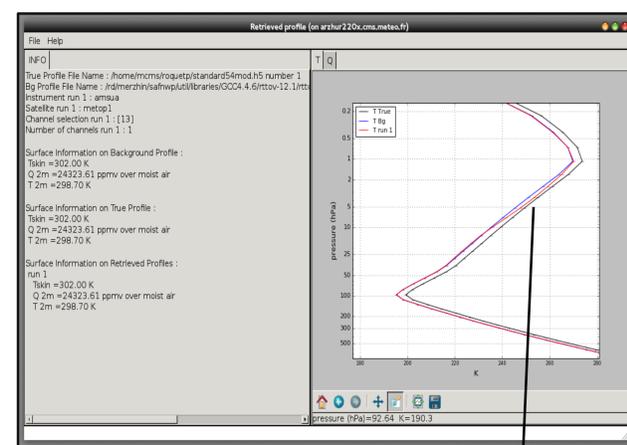
With RTTOVGUI you can run an 1DVAR retrieval, here is a retrieval for channel 13 of AMSU-A: look at the retrieved T temperature curve which is close to the "True temperature" around 5 Hpa.

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http://nwpsaf.eu/site/software/rttov