A Linux Desktop GUI for RTTOV v9

NWP-SAF
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RTTOV has a graphical user interface for the Linux Desktop. Using this interface, it will be possible to handle elementary pieces of data needed to operate RTTOV: profile data, radiances, etc... will be available as files easy to manage on the Gnome or KDE Desktop. The aim of this interface package is to allow RTTOV users and developers to experiment with RTTOV. It is already possible to modify an atmospheric data and visualize instantly the results of RTTOV output. The (possibly large) coefficient data are kept in memory to avoid reading them for each RTTOV integration. It will also be possible to run RTTOV on multiple threads.

The graphical interface for RTTOV is written in C++ using the cross-platform wxWidgets toolkit. Profile data, K-Matrix, radiances, etc... are saved in HDF5. RTTOV is embedded in a small independent application which communicates with the main profile editor/radiance viewer application. Gnome and KDE configuration files are provided to associate RTTOV data with custom icons and applications.

RTTOV Desktop
- window for the profile editor control
- window for the RTTOV execution
- window for the results (Direct, Jacobians)
- icons for inputs/outputs

Profile editor allows the user to modify any RTTOV profile structure variable, gases, clouds surface
You can show and enable the profile gas limits
Save/Load any object (gases, clouds ...) by a simple drag and drop
The X axis switches with selected gaz/temp

Ground editor, for skin and 2m/10m air variables

Cloud editor:
Cloud type, liquid/ice water and fraction profiles
Aerosols will be treated similarly to gaz profiles

For high resolution sounders like IASI the full spectrum is displayed. For successive RTTOV runs the difference with the previous one is also showed. For low resolution sounders, track of successive RTTOV runs and channel selection by menu.

Example of K matrix for IASI. Positive values in red, negative in blue. Horizontal bar allows to move across wavenumbers. For classical and high resolution instruments the Jacobians can also be displayed as profiles.

This is a prototype, please contact Pascal Brunel during the conference for a desktop presentation

ITSC-16 7-13th May 2008 Angra Dos Reis Brazil

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