A Linux Desktop GUI for RTTOV v9
NWP-SAF

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Prototype

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 and applications.

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

Miscellaneous variables, geometry

Drag and drop gaz or temp profile to the desktop

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

Cloud layer

Change profile with spline

Translate selection with Ctrl key

Surface object

All input/outputs are stored in HDF5 files.
Hdfview displays the content of the files and allows manual editing, it can also display arrays as images

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

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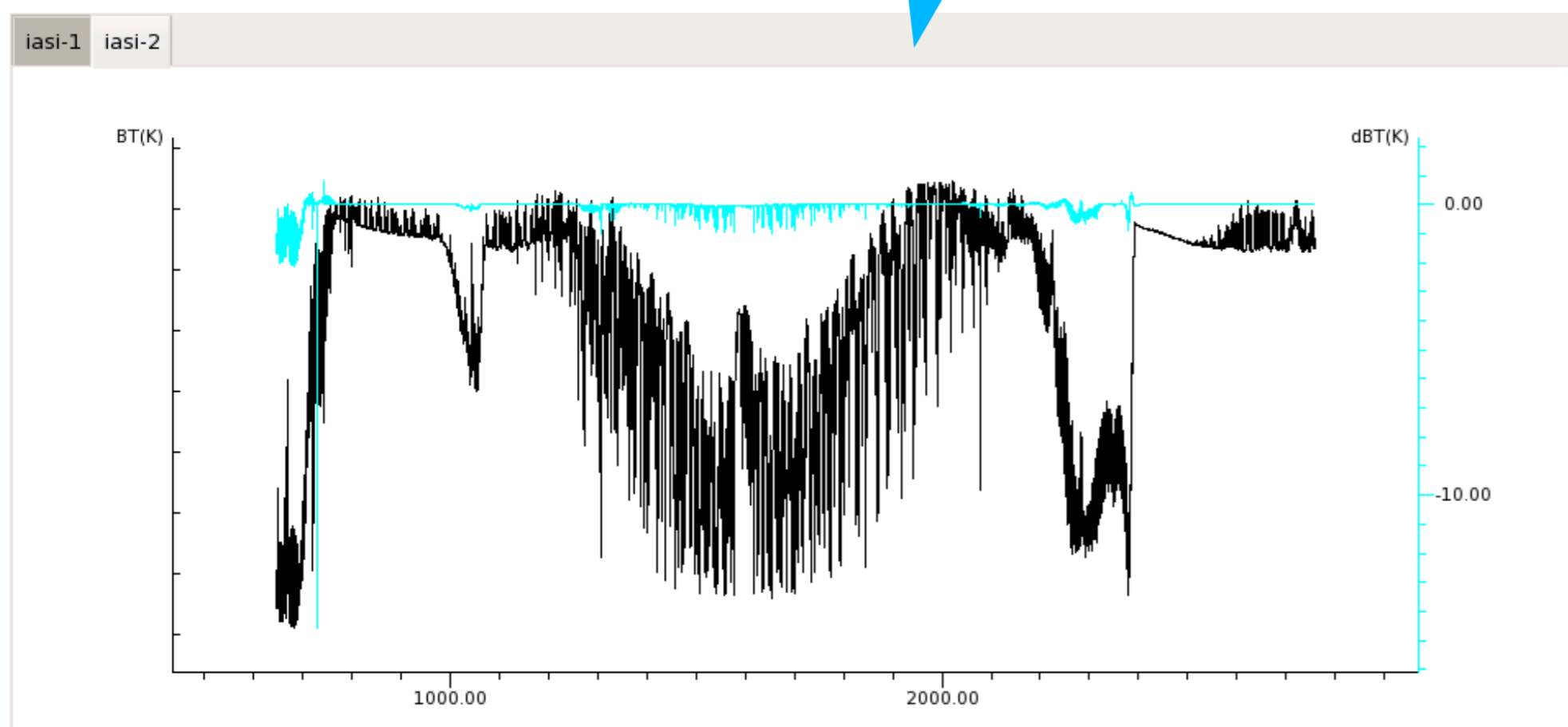The X axis switches with selected gaz/temp

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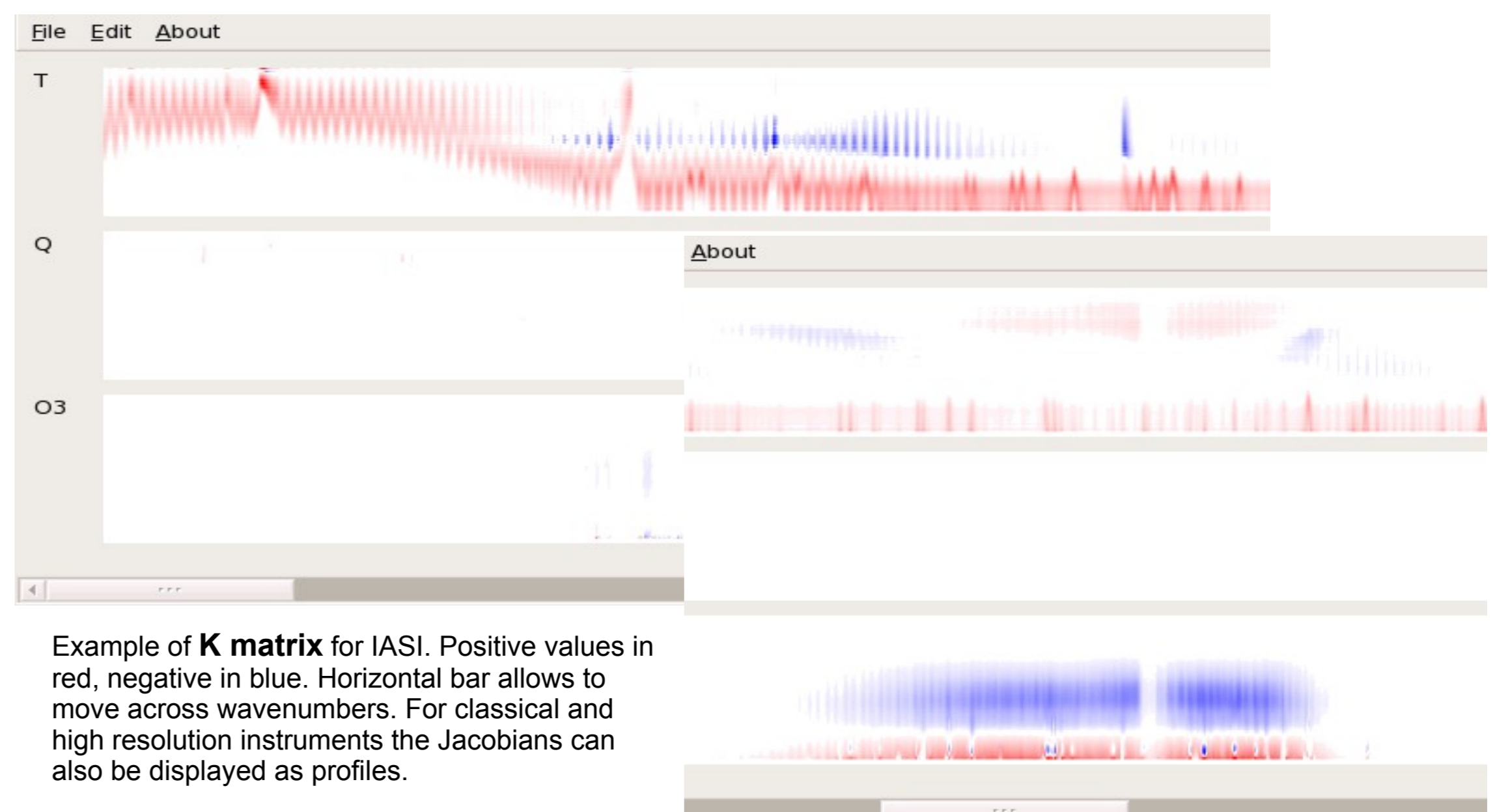
This is a **prototype**, please contact Pascal Brunel during the conference for a desktop presentation

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