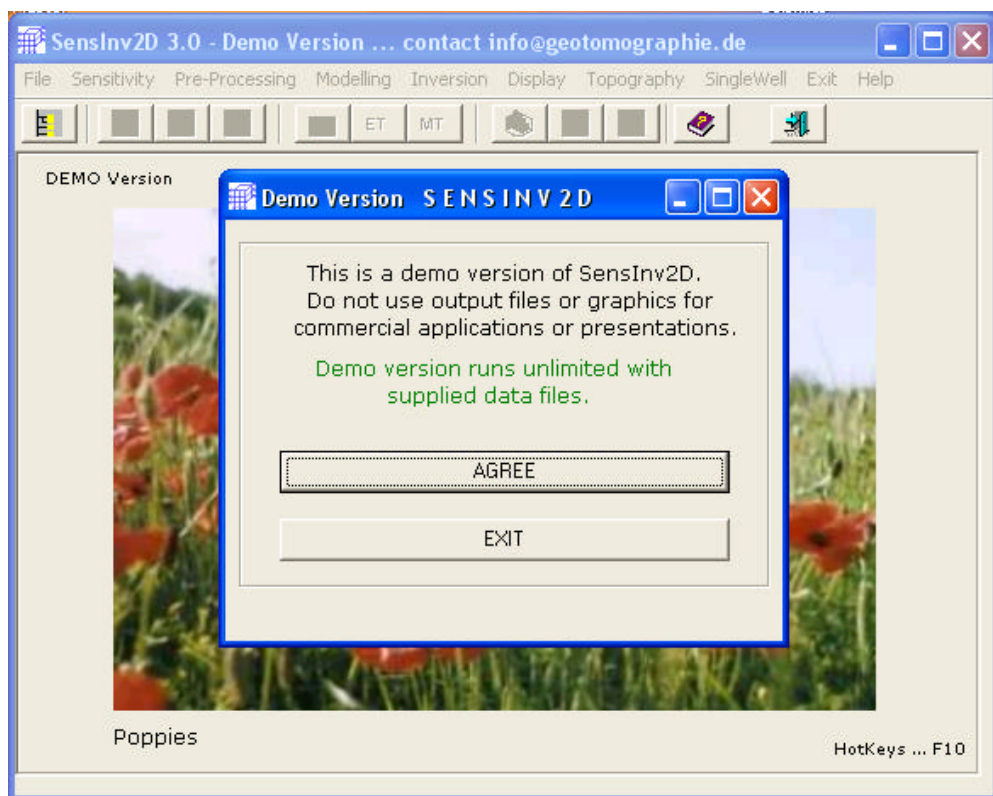


SensInv2D manual „First Steps doing Inversion with SensInv2D“

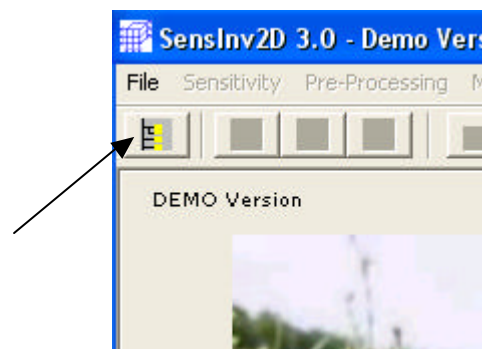
Within the following pages we would like introducing SensInv2D inversion options to support you using the DEMO version.

The files used are delivered together with the installation routine and all files are installed under a subdirectory name ../examples/data.

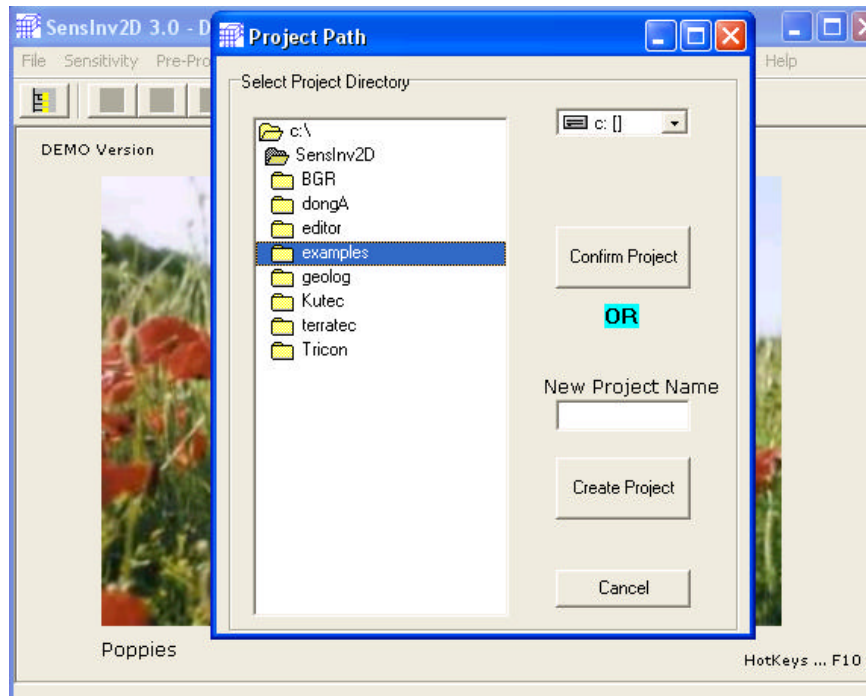
After getting notified by the software that you run a demo version the opening screen appears. Click on "AGREE" to proceed.



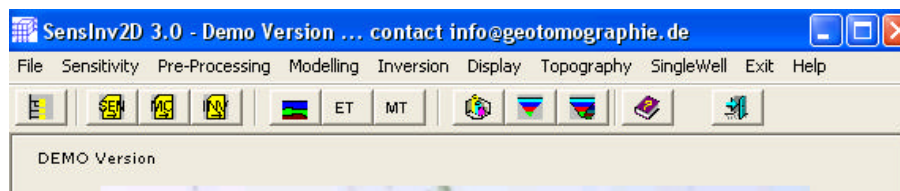
Now, please click on the yellow tree sign shown on the upper left corner. This will open a dialog window where you can choose your working directory.



Highlight the /examples directory visible within the left panel tree by clicking once with the left mouse cursor. If highlighted (blue background color) just press the "Confirm Project" to set the working directory.

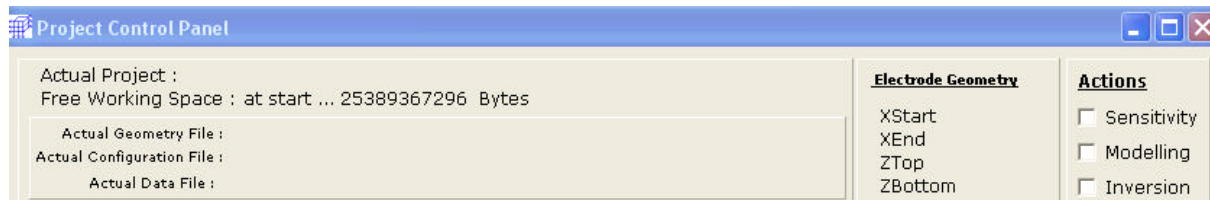
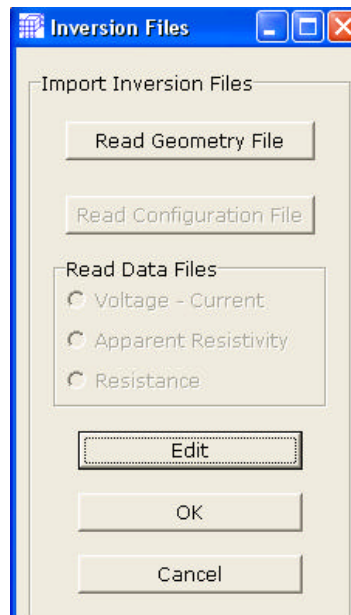


Now, all functions of the software are active.

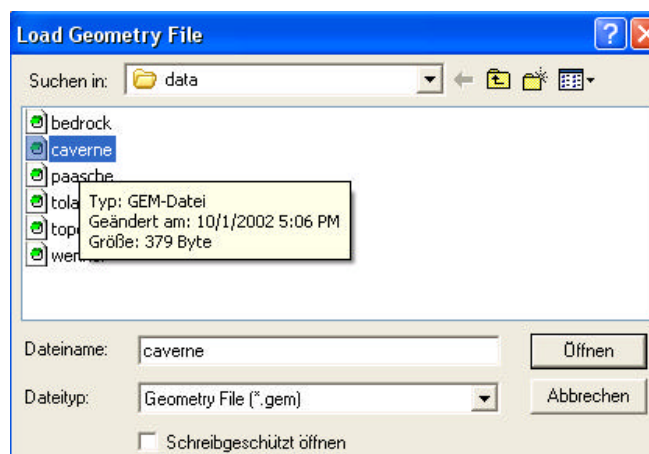


To load data files just click on the yellow sign INV (4th from left) seen right below the main task line.

Two windows are opening: first the window to load data files, second the "Project Control Panel" (PCP). The PCP keeps you informed about the files you loaded and the field geometry. At start the panel is empty.



You may now click on the "Read Geometry File" button to load the field geometry file which contains the information about the electrode positions. Please load "caverne.gem".



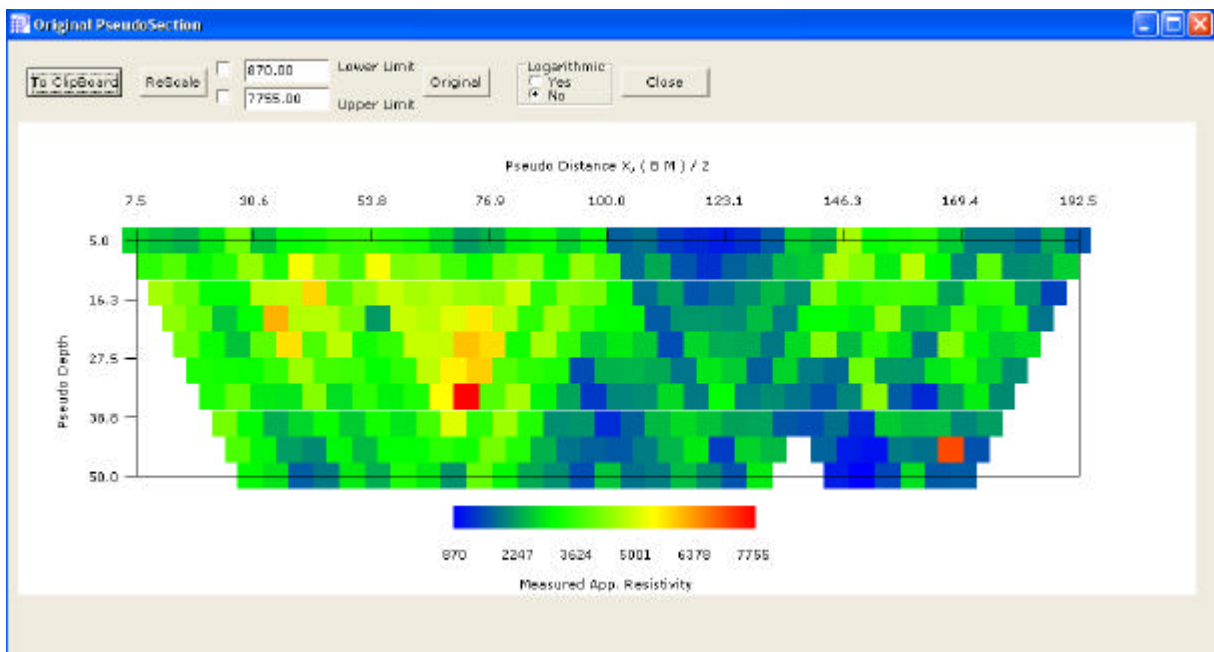
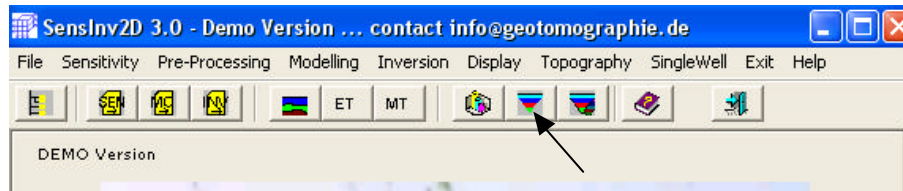
After that please click on the "Read Configuration File" button to load all electrode configurations used. Please load "caverne.sen".

Finally, please click on the "Read Data File" button "Apparent Resistivity" to load the measured data values. Please load "caverne.ars".

Now, click "OK" and all three files will be loaded. You can see the change within the "Project Control Panel".

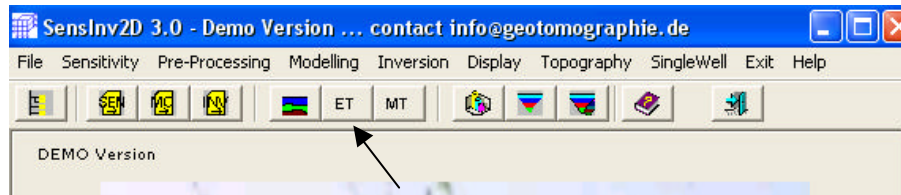


To view the pseudo section just click on the appropriate sign.

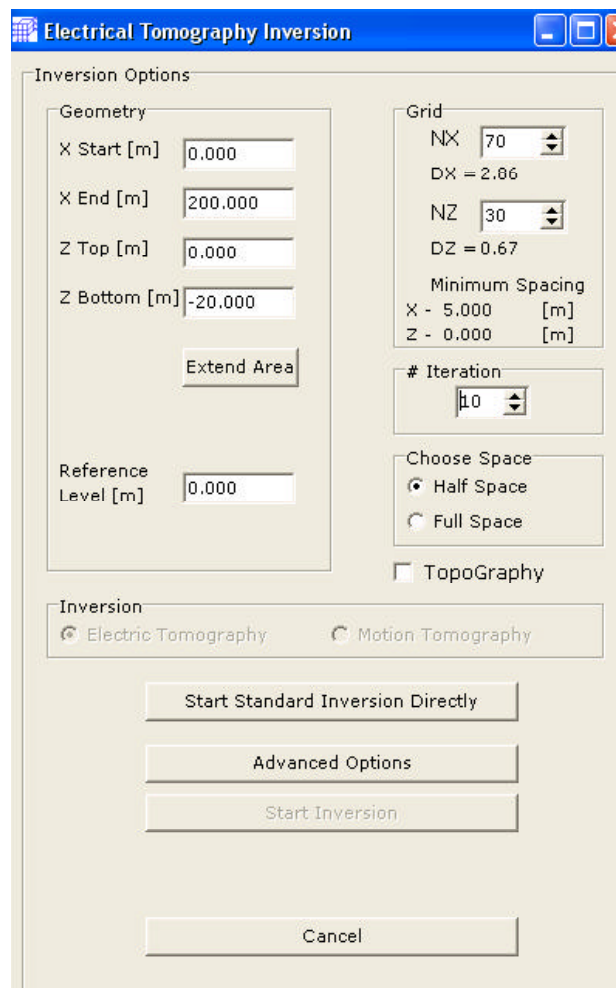


You may "Close" this window to proceed with the inversion routine.

To set parameters needed for inversion click on the "ET" sign.

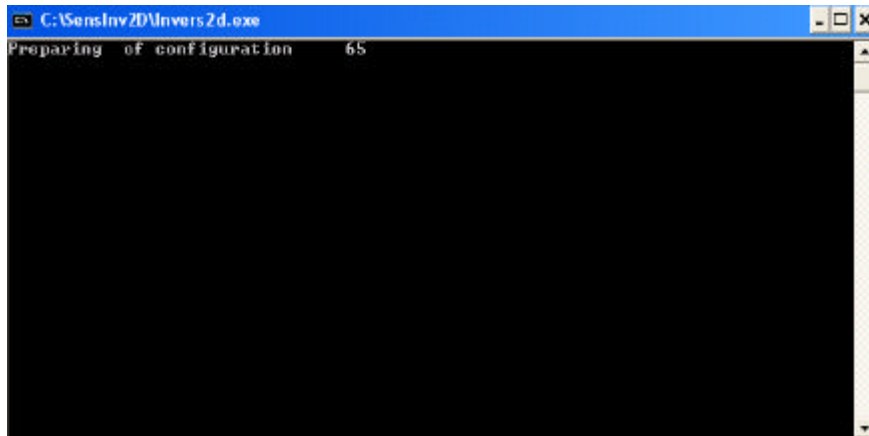


Set the "Geometry" and "Grid" and "Iteration" to the values given below. Please note ZBottom has to be lower than ZTop !



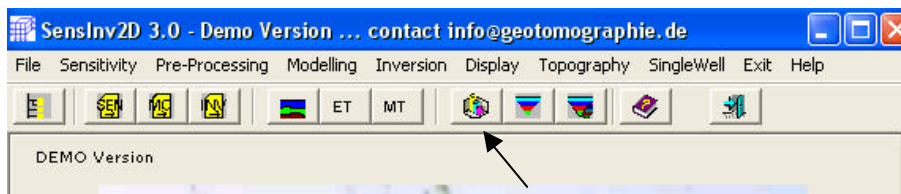
Click on "Start Standard Inversion Directly" to perform automatic inversion using the iterative MSIRT routine. A window will pop up informing you that all data are stored and named using a default name "test". Please confirm.

Now, a DOS window will pop up showing the progress of inversion. Also a window is opened "Graphics Display whilst Iteration" (only for very large files if inversion takes time and you want to view intermediate iteration steps).

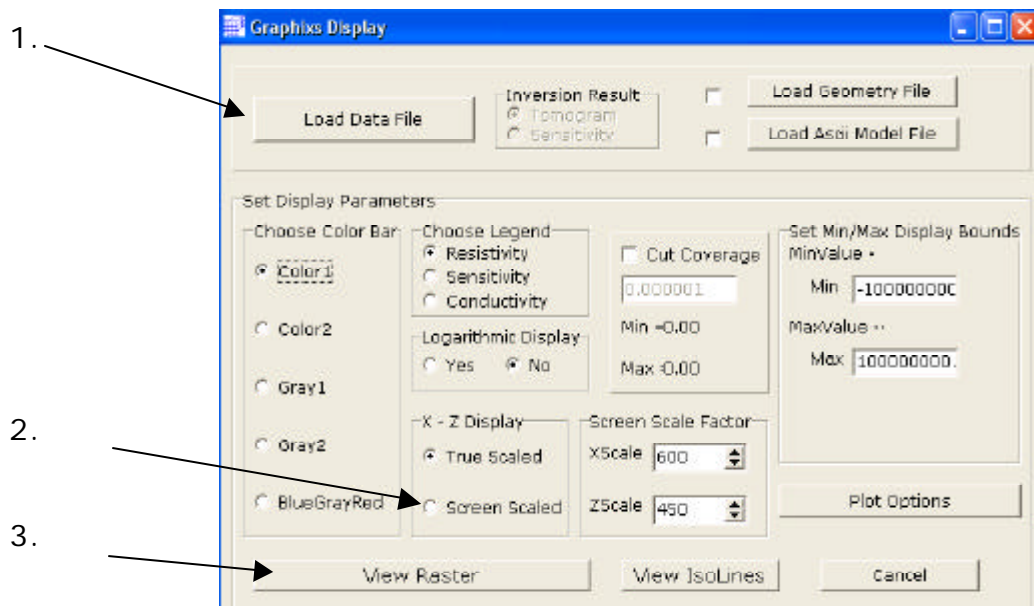


While iteration moves on iteration number as well as RMS values will be displayed.

After inversion is finished the DOS window automatically disappears and the standard screen is shown. To view inversion result click on the graphic display button.



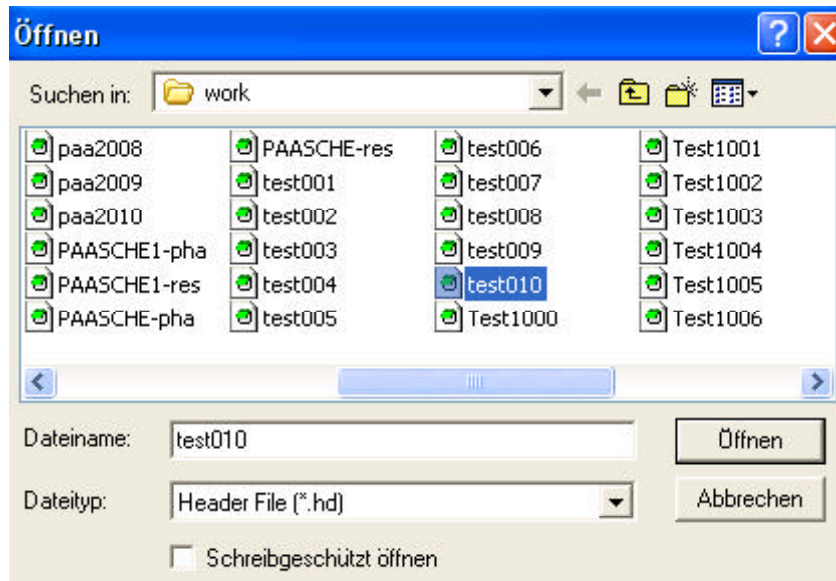
The "Graphics Display" opens up.



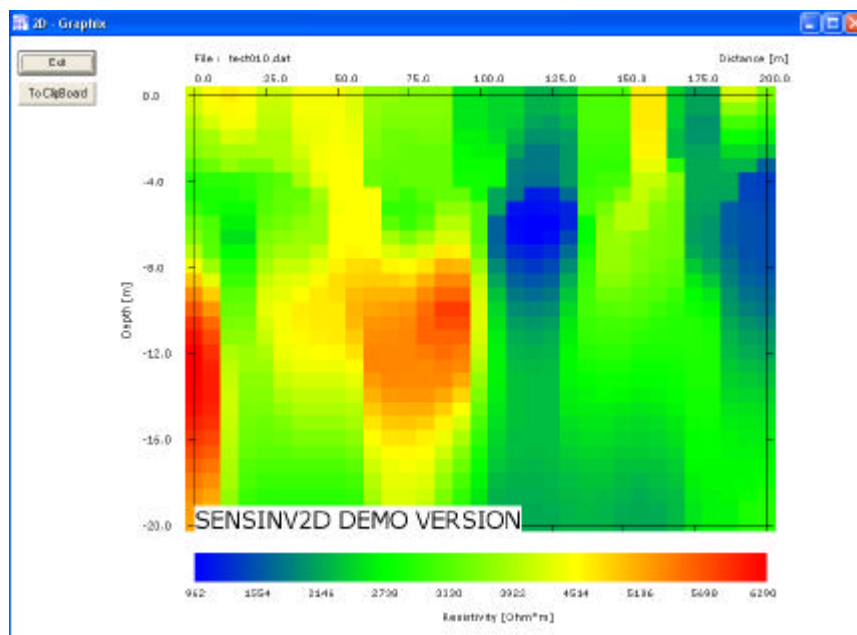
First, load the calculated inversion result files. All files are stored as ASCII files under the /data directory. As 10 iteration were selected also 10 output inversion files exist each files for each iteration. Files are numbered in increasingly order.

The name of the file of the first iteration is TEST001.HD. For the second iteration TEST002.HD and so on.

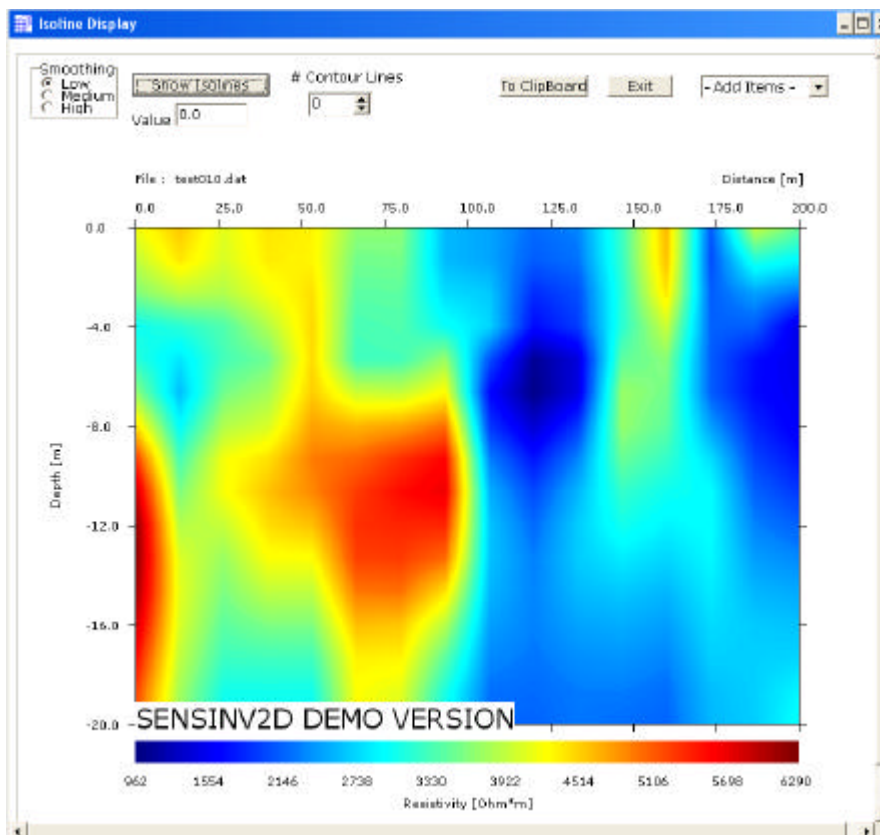
Please load the 10th iteration file TEST010.HD.



Second, set the "X-Z Display" to "Screen Scaled" and third click on the "View Raster" button.



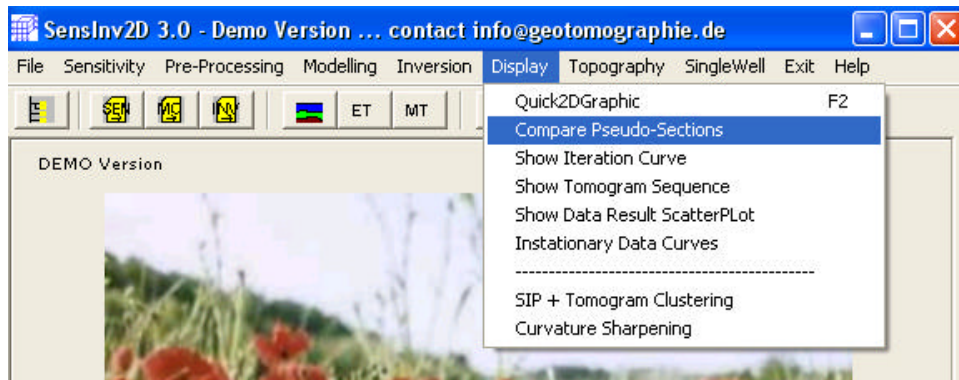
You may alternatively click on the "View Isolines" button to view the inversion result as isolines.



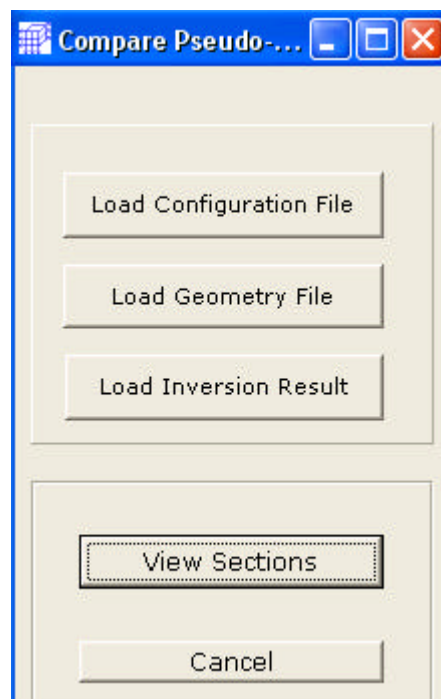
That's all to carry out the inversion.

If you want to view the goodness of the inversion you may either compare the pseudo section formed by the calculated and the original data view or the iteration curve.

To compare pseudo sections please click on the appropriate menu under "Display".

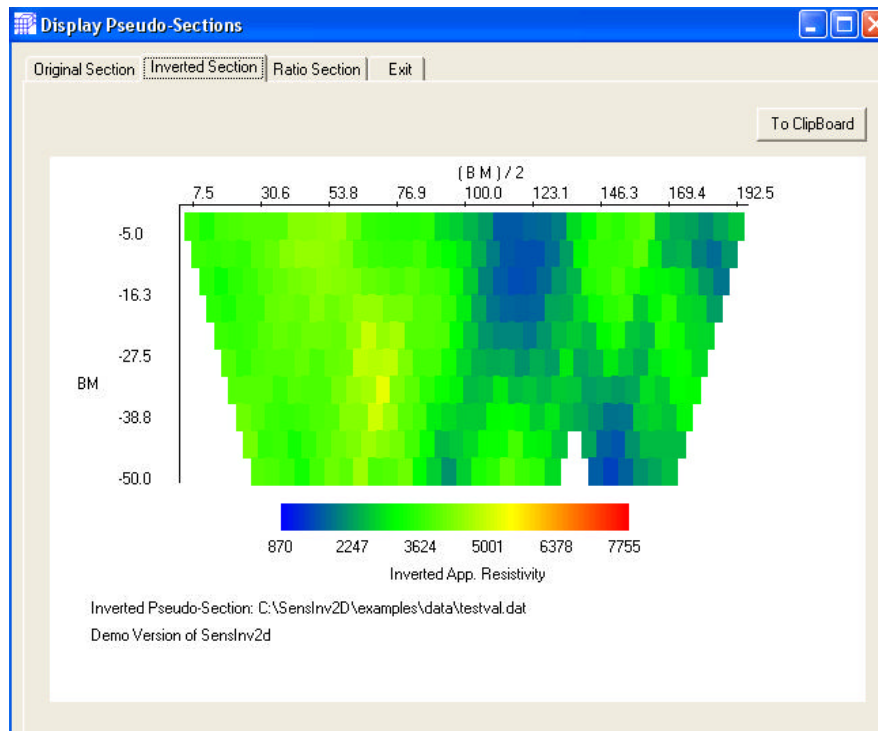


A menu pops up where you can open data files needed for comparison. Right after the inversion the files are still loaded and assigned to the Windows dialog menu. Anyhow, you need to load the configuration file (*.sen), the geometry file (*.gem) and the inversion result file (*.val.dat). The start (*) denotes the name you choosed for inversion e.g. TEST.

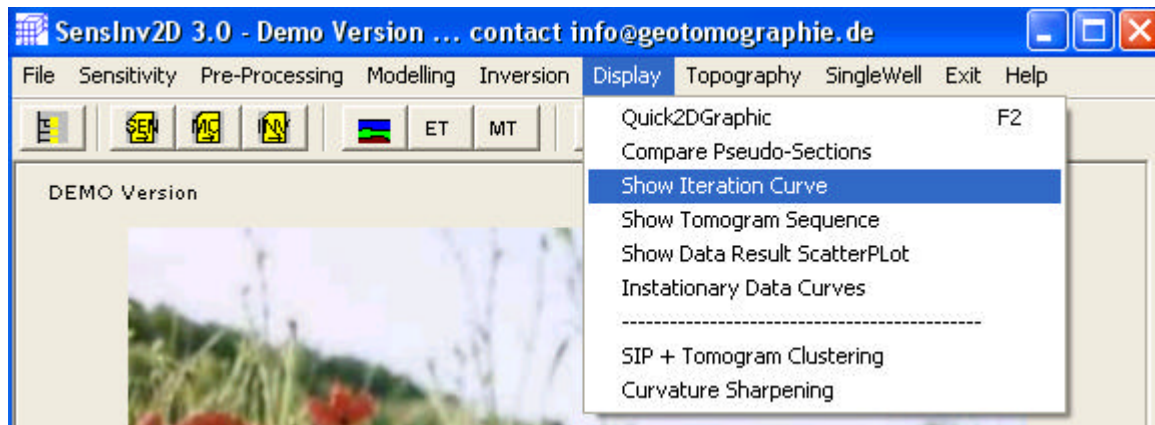


If you loaded the files just click on "View Sections" to display them. You may view the original pseudo section, the pseudo section for the calculated data during inversion as well as the ration between the two.

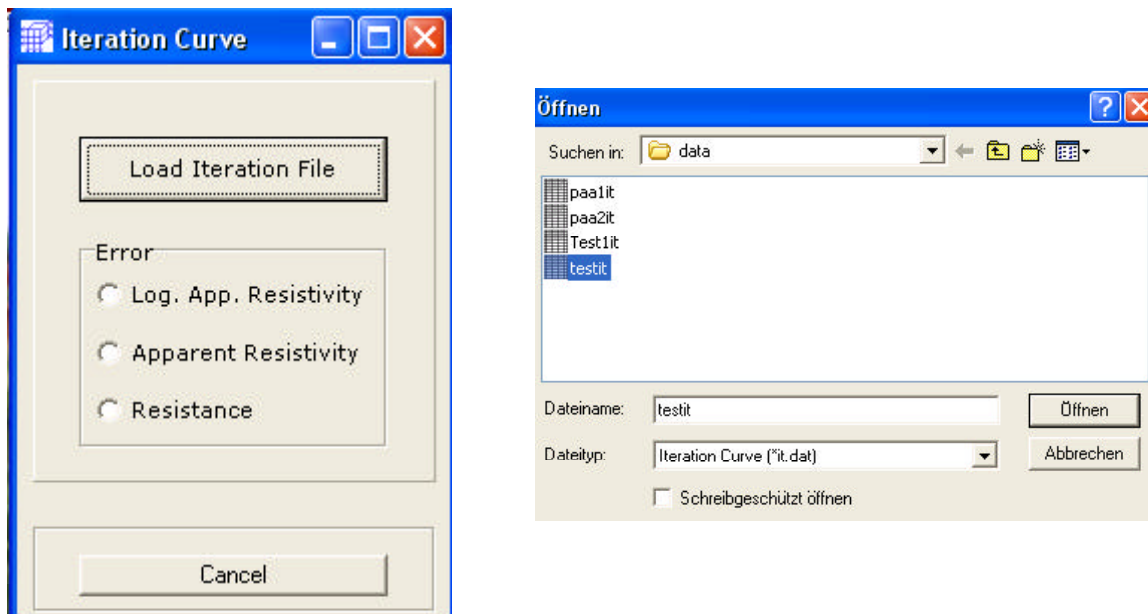
A ratio of "1" is ideal as there is a perfect fit for the data.



To view the iteration curve click on the appropriate menu under "DISPLAY".



A menu opens to load the iteration file. Load the file it.dat. The start () denotes the name you chose for inversion e.g. TEST.



After loading the file you can choose to display three iteration type curves. Basically, the RMS is calculated for the logarithmic apparent resistivity, the apparent resistivity and the resistance.

