

Picking single objects within REFLEXW

I. Picking hyperbolas along one profile line

The following flow described one way how to mark single objects (hyperbolas) and to save the parametres *x*, *z* and *ID* on an ASCII file for a further interpretation with any other CAD-system.

1. enter the module 2D-dataanalysis
2. load the wanted GPR or seismic *ZO*(zero offset) profile
3. activate the option **pick**
4. activate the option **manual pick**
5. enter the ID of the hyperbola within the paramter **pickcode**
6. click on the cusp of the hyperbola within the profile using the left mouse button
7. repeat step 5-6 until all hyperbola cusps have been picked
8. enter the option **save** and activate the pickformat **ASCII-columns**. In addition you also may save the picks using the REFLEXW-Win format in order to load the picks at a later stage again.
9. Activate the options depths, amplitudes and pick codes.
10. enter the wanted velocity in m/ns for converting the 2-way traveltimes into depths
11. enter the wanted filename and press save
12. each line of the output file contains the following informations:
profiledistance profileconstant-start traveltime depth amplitude code

II. Use of xy-coordinates

II.1 Use of xy-coordinates defined within the fileheader for one single profile

The ASCII-output described above does not contain the real xy-coordinates but the distance coordinates along the profile together with the start coordinate in the profile constant direction. Therefore these coordinates only correspond to the real xy-coordinates if the profiledirection is strictly orientated into x- or y-direction. If this does not hold true (e.g. diagonal lines) you must take into account the so called traceheader coordinates in addition.

The following steps are necessary before picking:

1. Define the geometry of your file within the **fileheader** either during the **import** or within the edit fileheader menu (option **edit fileheader**). The example shows a diagonal line.
2. After having defined the fileheader coordinates (do not forget so save them before when you have changed the fileheader coordinates within the fileheader menu) activate the option **ShowTraceHeader**.
3. The traceheader menu opens. Here you may actualize the traceheadercoordinates either based on the fileheader coordinates or based on different ASCII-files (see also guide for GPS-coordinates). Enter within the Actualize panel for **type** fileheader and press the button **actualize**.

4. Now the traceheader coordinates are defined based on the given fileheader coordinates. You may check the coordinates using the **trace number** edit button.

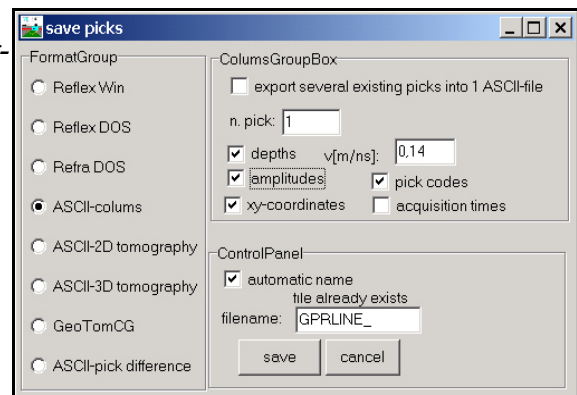
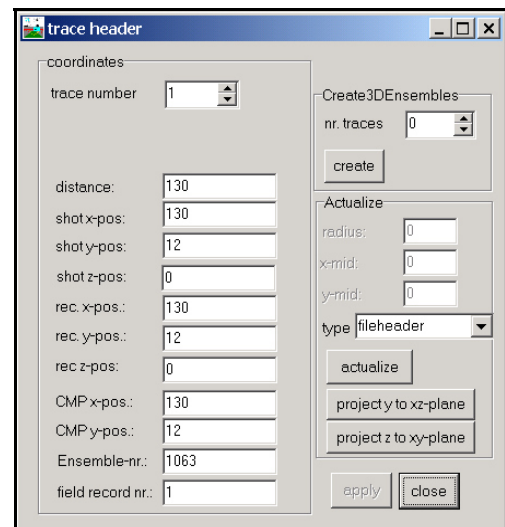
5. Close the traceheader and the fileheader menu and pick the hyperbolas like described in chapter 1.

6. When saving the picks using the format ASCII-columns you must activate the option **xy-coordinates** in addition.

7. 12. Now each line of the output file contains the following informations:

profiledistance profileconstant-start shot-x shot-y receiver-x receiver-y travelttime depth amplitude code

For zero offset data the shot and the receiver coordinates are the same and you only may consider one coordinate pair.



II.2 Use of xy-coordinates for several profiles

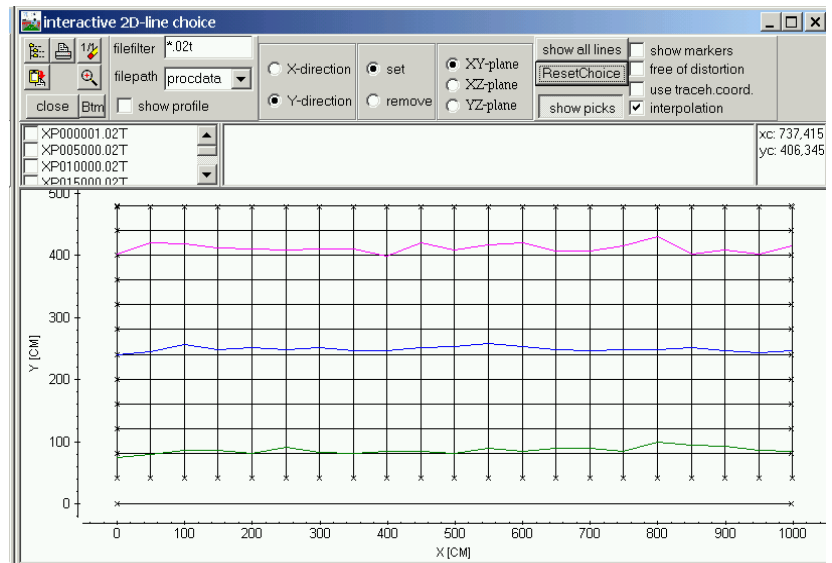
It is also possible to save the picks of different 2D-profiles into one ASCII-file.

1. For that purpose first you must save the picks of the 2D-profiles into different Reflexw-pickfiles using the pick format Reflex Win.

2. You may control the location of the picks within the interactive choice menu - enter for that purpose file/interactive choice within the 2D-datanalysis - the interactive 2D-line choice menu opens

3. Choose the wanted filepath and press show all lines

4. Click on show picks and choose the wanted pickfiles (multifile choice using the shift or strg key)



5. Picks belonging to the same code are connected if the option interpolation is activated. If the option use code within the 2D-dataanalysis is activated the layershow-colors are used for the display of the picks.

6. If the picks are correct you may leave the interactive choice menu and enter the pick save menu in order to save all the picks for the different 2D-lines into one single ASCII-file.

7. Within the save pick menu you must choose the “ASCII-colums” pick format and you have to activate the option “export several existing picks into 1 ASCII-file”.

8. Click on save and choose all wanted ReflexWin formatted pickfiles (multi filechoice using the shift or strg key).

9. Each line of the resulting ASCII-file contains the following values:

traveltime depth amplitude x-shot y-shot z-shot x-receiver y-receiver z-receiver code(optional)

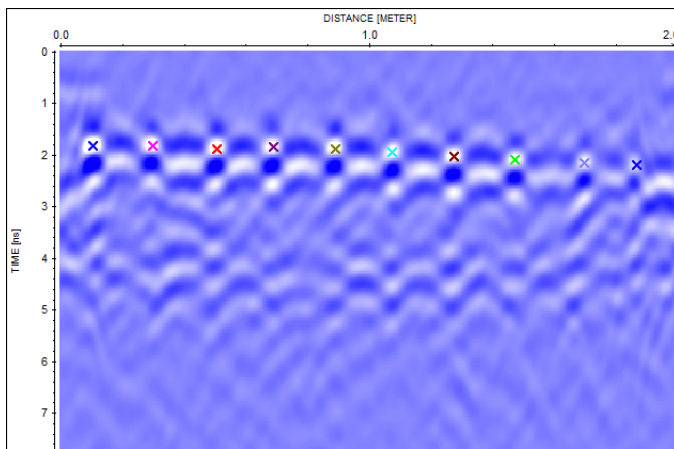
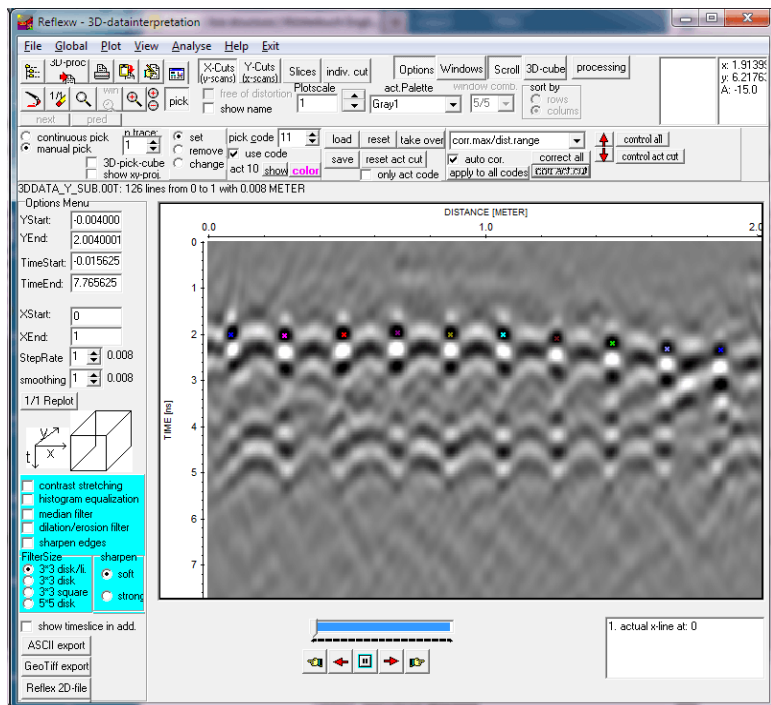
Depths and amplitudes are set to zero if the corresponding options depth and amplitudes are deactivated.

III. Picking linear structures within a 3D-datafile

Reflexw allows a fast picking of single objects within the 3D-datainterpretation.

The following procedure may be applied to all types of single objects like pipes, rebars or other line structures.

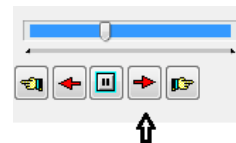
1. Load a 3D-file within the 3D-datainterpretation and choose Scroll and the appropriate cut
2. Activate pick and activate use code and auto cor. based on corr.max/dist.range (option only act. code is deactivated). The parameters for the corr.max/dist.range may be entered within the global settings menu (parameter pickcorrect traces which should be set to 1 for data with a small cut increment).
3. Click on apply to all codes
4. Pick all elements of one block (e.g. one set of rebars orientated in one direction) using different codes (the F4 key may be used in order to increase the code) within the actual cut
5. Go to the next cut using the right scroll



button (hand)

6. Click on take over - the picks from the previous cut will be taken over to the actual cut

7. Click on the right arrow in order to scroll through the complete 3D-block. The new picks will be displayed. You can stop the scrolling at any time.

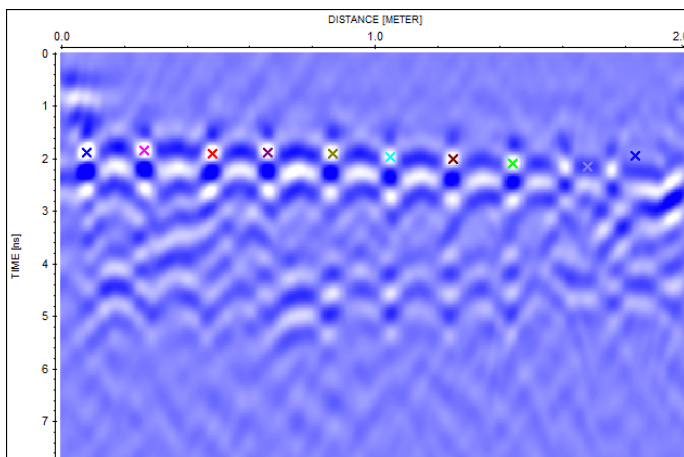


8. Control the picks by scrolling back. If any element will be lost due to a lateral jump for example (see example on the left for the two last picks) you may manually change the false pick:

- enter the code of the false pick (here 9)
- activate the option only act code
- change the correction type if necessary
- activate change and click on the correct pick position
- activate the option take over and scroll using the right red arrow to the end of the block, the wrong picks will be changed according to the new settings.

9. Make the same for all wrong picks (item 8)

10. Save the picks. It is recommended to store all



different picks sets on different files as this simplifies the semi automatic picking.

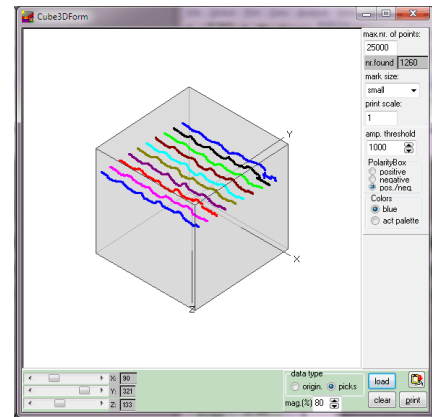
11. You can check the picks using the option view/fast data cube display. Activate picks and click on load.

12. Deactivate the option only act code and reset all picks using the option reset

13. Enter a new code for the starting pick of the next set of picks, e.g. the lower picks. Make sure that the new pick code(s) has not been used before.

14. Perform step 4 to 11 to the next set of picks.

15. Perform step 12 to 14 for all wanted pick sets.



After having picked and saved all wanted structures it is possible to view the picks within the 3D-cube display.

Enter for this purpose the option view picks surfaces for 3D-cube and choose the pick files. Different display options are available, e.g. for the color or the shading.

