

About This Version – 1.01



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1. Summary

For the beta-testing of ParkSEIS during the last several months to crowd-source bug-fixes, several users actively participated by sending carefully prepared bug reports and suggestions for possible improvements in various aspects. Their contributions greatly improved the overall user experience and functionality of the software. Some of the reported bugs were minor, and some were critical.

The most recent issue with help files is described here with a way to resolve it. Additions and modifications made based on the participants' feedback are explained here. Major bugs are listed in the table and briefly explained (if necessary) about how they were handled.

2. Help Files Not Opening

(Windows 8 and Adobe Acrobat Reader DC with Protected Mode)

Help files are available at various places of ParkSEIS in the form of user guides in PDF. These files may not be opening when invoked within the ParkSEIS program, and the PDF reader can freeze up. This occurs only under **Windows 8 with Adobe Acrobat Reader DC installed as default PDF reader**, and the issue has been widely reported online with other programs that attempt to open PDF internally. This is related to an incompatibility of the reader when the "Protected Mode" is enabled.

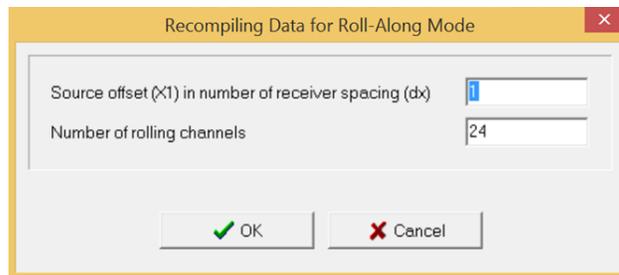
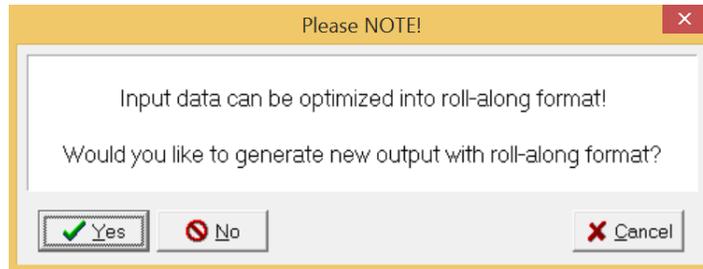
To solve this issue, system has to restart first to break the "freeze" of the reader. Then, **open the Acrobat Reader DC**, and do the following:

- 1) Choose **Edit -> Preferences**.
- 2) In the **Categories** list on the left, select **Security (Enhanced)**.
- 3) In the **Sandbox Protections** section, deselect **Enable Protected Mode At Startup**.

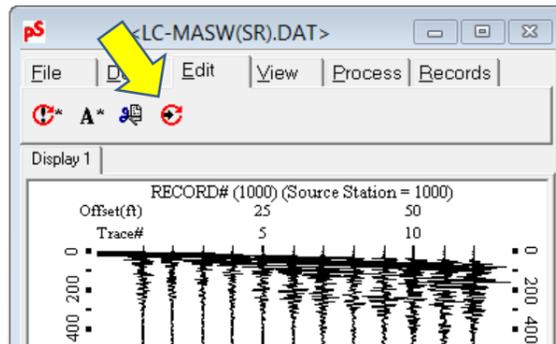
3. Additions and Modifications

3.1 Generation of Roll-Along Records

When importing a seismic data file for dispersion image generation, the program will examine the acquisition format of the input data and will issue the following dialog asking to generate roll-along type input records if the input format is not such a type. If selected, then the control dialog will appear where the source offset (X1) and the number of rolling channels can be specified. The default values are the ones detected by the program as most optimal.

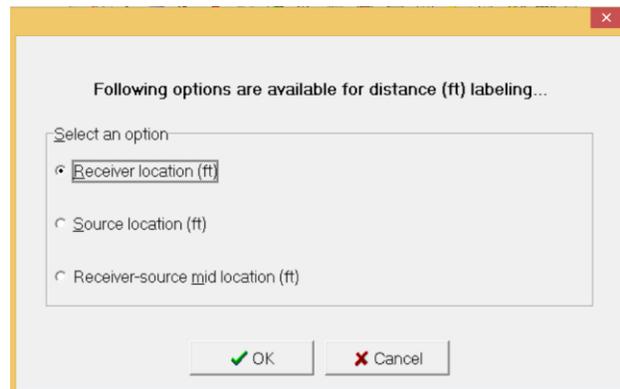
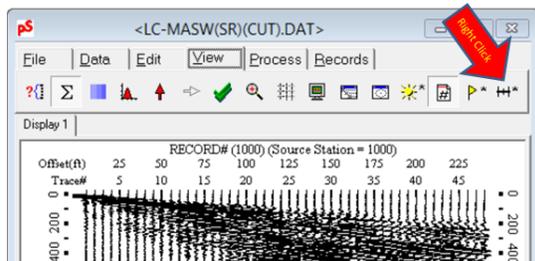
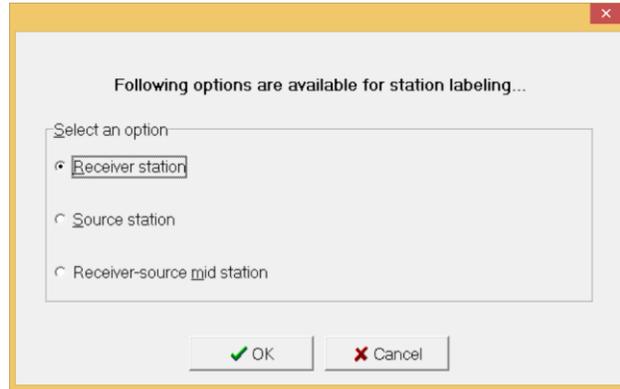
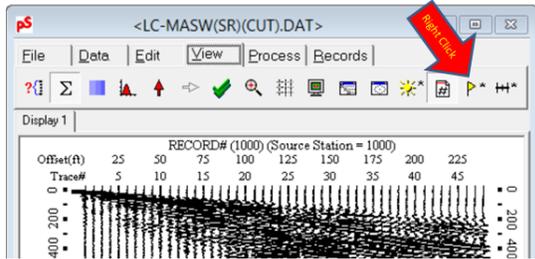


The generation of roll-along type records can also be performed from a display of seismic data by selecting the "Edit" tab on top. Then, press the roll-along button to display the control dialog shown above.



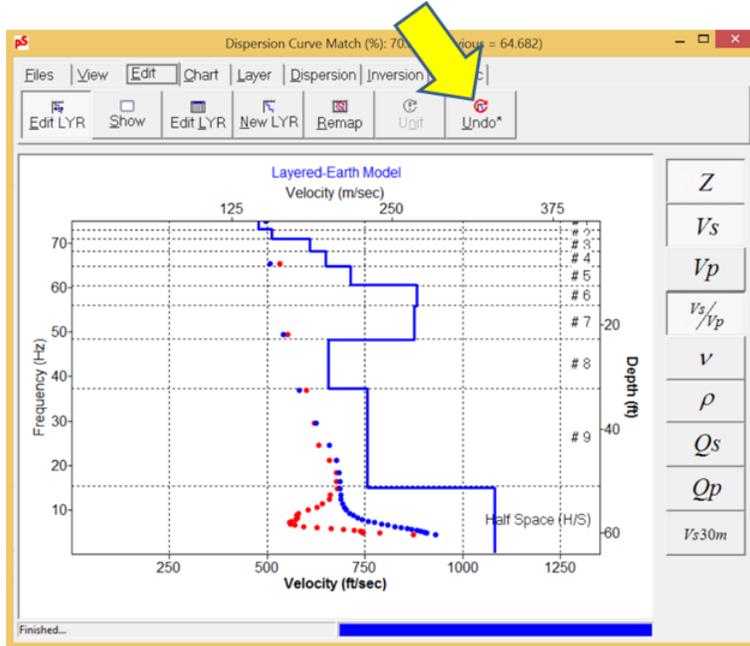
3.2 Horizontal Coordinates for Seismic Display

Options are available for display of horizontal coordinates for station numbers and survey distance. Right click each button to show the control dialog illustrated below. For both types, three options are available: receiver, source, and receiver-source midpoint.



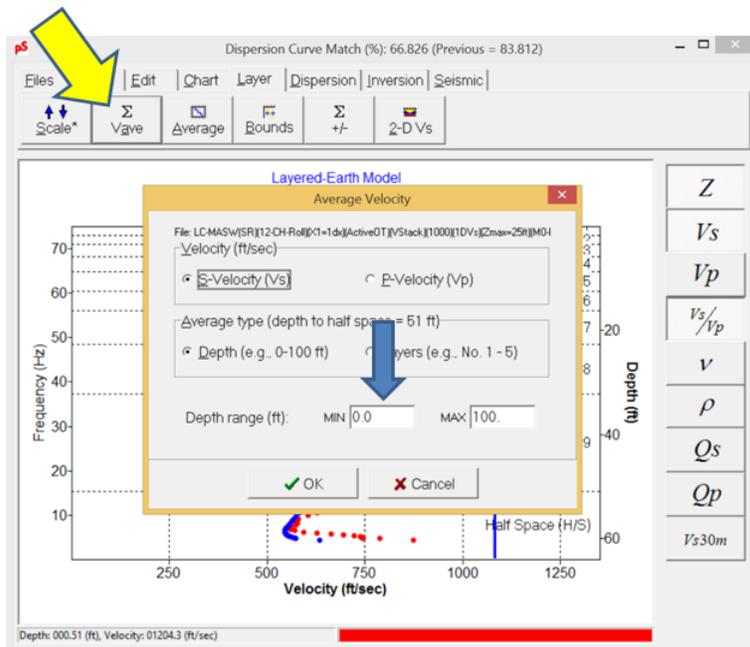
3.3 Undo Edit in 1-D Velocity (Vs) Display

When editing values in a 1-D velocity (Vs) display, previously edited models can be displayed by pressing the "Undo" button in the "Edit" tab as shown below. Right click the "Undo" button to redo.



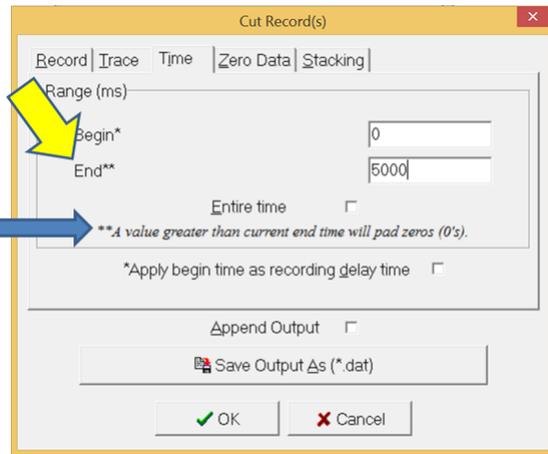
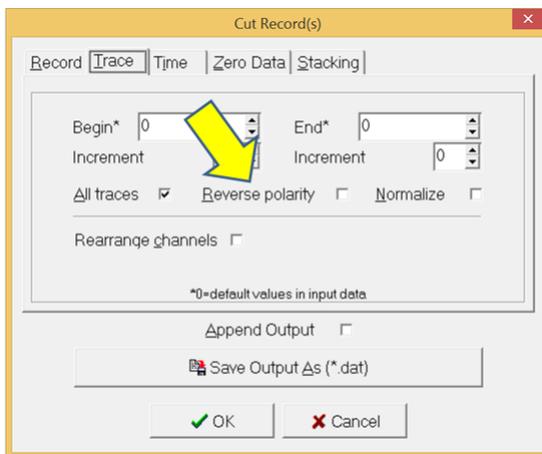
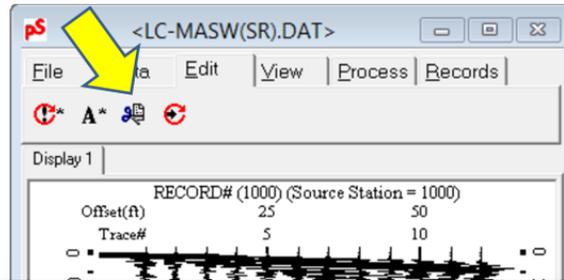
3.4 Minimum Depth for Average Vs (Vave)

Minimum depth can be specified in the control dialog to calculate the average velocity (Vave) of a 1-D velocity profile as shown below.



3.5 Zero Padding and Reverse Polarity

When exporting seismic data from a display window by pressing the "Cut/Append" button in the "Edit" tab as shown below, there are now two additional options available: "Reverse Polarity" and zero padding. The first option will reverse the polarity of seismic data in the output file, and the second option will add zeros at the end of the current recording time if the "End" time is specified longer than the current recording time.



4. Table of Bug Fixes

Type Code

DA: Dispersion Analysis, **DD:** Dispersion Display, **GE:** General, **IA:** Inversion Analysis
SR: Source/Receiver (SR) Setup, **Vs1D:** 1-D Vs Display, **UT:** Utility

Type	Issues (Comments on solution)	Fixed (√)
DA	After extracting the dispersion curve, attempting to zoom in a specific area in the dispersion image would delete some data points of the extracted curve. (Press the zoom button in "Scale" tab, and then specify the area to zoom in)	√
VS1D	When performing a 1-D inversion from a .dc file and then minimizing the window, the window disappears and is not able to be maximized again.	√
DD	When creating seismic data from an inverted model and then creating the OT (or dispersion image) from that data, it appears that the filters OT-Filt and OT-STK do nothing, and furthermore right clicking on them does nothing.	√
SD	When processing seismic data to add noise, there is a problem when clicking Ok button to process once, and then on the next time clicking cancel, and then trying to process again.	√
SR	When importing a file and then looking at the geometry, the windows seem to have problems where the user is forced to press Alt-F4 to regain control of the program.	√
DD	In dispersion-image display, the 2-D AGC gain ("Gain" button) appears to be not what it should look like.	√
GE	The open-file dialog sometimes does not allow user to change its size.	√
VS1D	Dispersion curves displayed in the 1-D s-velocity (Vs) profile cannot be flipped vertically so that they can be better compared with model Vs profile. (This is now possible by clicking the axis and display a control dialog where there is a separate option to "invert" the axis)	√
SR	It does not appear that program has the ability to divide files of shots inside an array into the roll-along records. (There is an additional option under "Edit" tab in the seismic display that enables this. Also, the program will detect this automatically at the necessary stages and inform the user if the new preparation of input data is to be executed first)	√
SR	"Invalid floating point operation" error sometimes occurs when the source/receiver (SR) setup is performed. (This happened when the input record does not have consecutive channels starting from 1. The program will now detect this and inform the user of the automatic channel rearrangement)	√
SR	Display of source/receiver (SR) configuration when importing input SEG-2 files contained some buttons that, when clicked, made the system freeze up. (Now, these buttons are disabled when SEG-2 files are imported. They are enabled only when a file of PS format is imported)	√
SR	After a setup for source/receiver (SR) configuration for passive data has been executed for a 2-D receiver array, the array configuration of the output file appears to be wrong with a certain degree of distortion observed. This happens especially when the size of the array is relatively small. (This was caused by a round-off error introduced in the	√

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	output header after applying a multiplication factor of '10' although it should be '100.' This factor is now automatically adjusted based on the array size.)	
IA	Sometimes when trying to perform a 2-D inversion and selecting various dispersion curves, the inversion only selects a couple (or only 1) of the dispersion curves. When this occurs there appears to be no way of including the missing dispersion curves into the inversion. (This is because there are multiple dispersion curves that have the same surface coordinates, and are therefore discarded from the analysis. When this happens, the program will display notification.)	√
SR	When setting up the source/receiver configuration with a receiver spacing of 0.5m, setting the offset at 0.25m or 0.5m completely changed the receiver locations. (This was caused by an incorrect logic incorporated in the algorithm. Also, the program will now inform the user that the source offset should be a multiple of the receiver spacing.)	√
UT	In the "Walkaway" utility, it is not possible to change the "Selected Record #" displayed in each tab of STEP 1. (Now, it can be changed by selecting, i.e., by displaying, a proper record within the corresponding seismic display window.)	√
SR	Incorrect source/receiver (SR) configuration occurs, especially when the shot point was inside the receiver array. (Several other glitches, including this, in the SR setup module have been found and properly repaired.)	√
DA	During dispersion image generation with a seismic record of a short recording time (for example, shorter than 100 ms), an error message of "negative, or too low, frequency detected for surface waves" is issued. (This case is now specially handled during the FFT operation to avoid this error)	√
GE	Display of seismic data or dispersion images does not work (additional windows briefly open and close in an instance). Sometimes, an error message "Floating point division by zero" is issued. Further analysis of data (for example, dispersion image generation) then also results in an error. (This occurred under "multi-monitor" environment. This environment is now automatically detected and handled properly.)	√
IA	When only 'Account for mode jump' is activated in the inversion dialog, software freezes. (This occurred only when the input dispersion curve has an 'inverse' dispersion trend at very high frequencies; for example, frequencies higher than 5000 Hz. Actually, the software does not freeze, but it simply progresses so slowly that no noticeable response can be observed for a while. It may take several hundred times longer time than with the more common dispersion curves in relatively low frequencies; for example, frequencies lower than 100 Hz.)	
GE	An error message of "Error in opening file <%>" is issued when trying to import data. (This occurred when the input file name included a period ('.') in any part of the complete path. The program now warns of this and suggests the user change the file name or folder location.)	√
VS1D	Referring to the European / German norm, we need to calculate a value Vs3-20m for Seismic Site Classification for the depth range between 3 m and 20 m below surface. The calculation of average Vs assumes the starting depth is always zero ('0') although the ending depth can be freely changed. (There is an additional input box included now so the starting depth may be specified as well.)	√
VS1D	In the display of the "Layered Earth Model," the right-hand scale is reversed (0 m at the bottom, greatest depth at the top). (This occurred due to the previous display of dispersion curves in the same chart with inverted axis scale. The depth axis will now	√

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	always show increasing depth toward bottom.)	
VS1D	Is it possible to add a switch to completely remove the “feet” and “feet/sec” axis annotations? For us European they are always confusing. (Labeling of any axis can now be completely removed by unchecking "Visible axis" option included in the Axis Scale Control dialog, which pops up on clicking the axis.)	√
GE	An error message "... is not a valid floating point value" is issued and it is impossible to perform any subsequent operation. (This occurred when the decimal symbol was something other than a period. The program will detect the environmental setting for this and notify the user to properly change it by going into the Windows control panel.)	√
DA	When input data contains very-high-frequency (VHF) surface waves (e.g., > 5 KHz) that are recorded over a "hard" surface (e.g., pavement) with a significantly short receiver spacing (e.g., ≤ 0.1m), all processing modules do not act properly. (This was due to an incorrect detection of input data type and is now fixed. The SR setup, dispersion analysis, and inversion analysis steps are now properly implemented.)	√