

# *Geogiga Seismic Pro 9.1*

## *Release Notes*



Copyright © 2019, All rights reserved.

## Table of Contents

Introduction.....	1
Part 1 – Feature Enhancements.....	2
General Enhancements.....	2
Improvements to Individual Modules.....	4
Part 2 – Bug Fixes.....	7
Technical Support.....	9

## Introduction

This document introduces the release of *Geogiga Seismic Pro 9.1*.

*Geogiga Seismic Pro* is a complete seismic data processing and interpretation software package adapted for near-surface geophysics. It contains 18 standalone applications handling the full range of seismic survey methods from Reflection, Refraction, and Surface Wave to Borehole Seismic. There are also utilities for wavefield modeling, velocity model plotting, and much more.

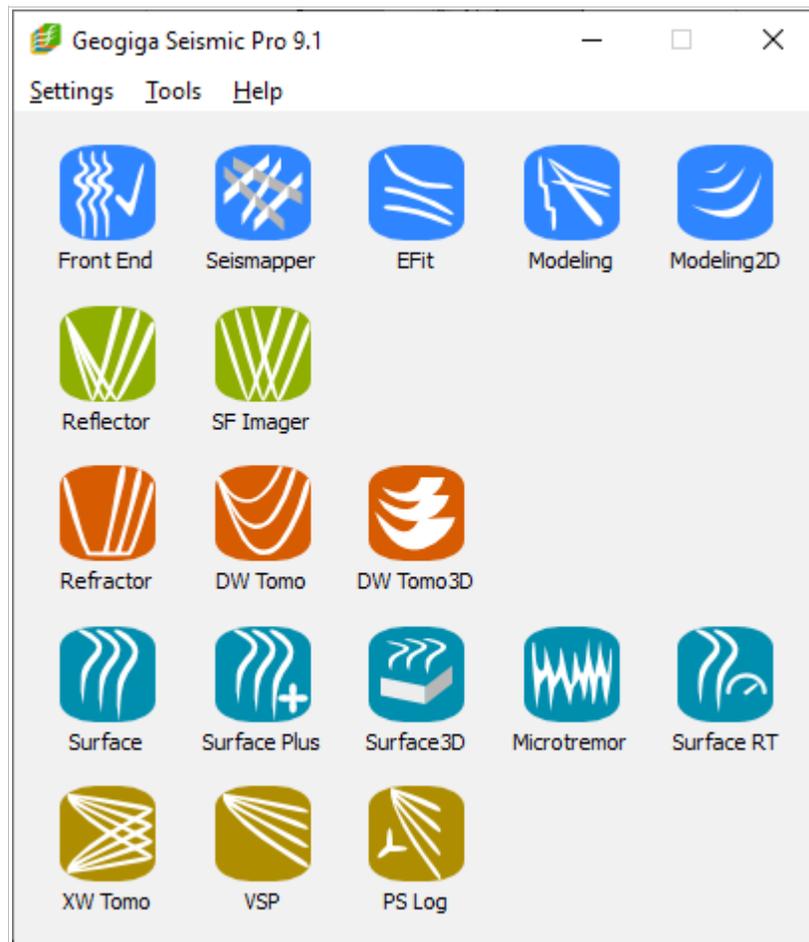


Figure 0-1: *Geogiga Seismic Pro 9.1* Launchpad

Version 9.1 is a minor release, intended for minor feature enhancements and bug fixes. The release notes are provided in the following order:

- Part 1 – Feature enhancements.
- Part 2 – Bug fixes.

## Part 1 – Feature Enhancements

This section lists the common feature improvements to *Seismic Pro* 9.1, and then describes the updates in each individual module.

### General Enhancements

The following enhancements apply to most of the modules in *Seismic Pro*:

#### (1) Velocity Section Plot

- The settings of contour plots are simplified in the **Section Grade Definition** dialog box as shown in Figure 1-1.
- Labeling of contour lines can be separately enabled.
- The number of levels can be set at a time.

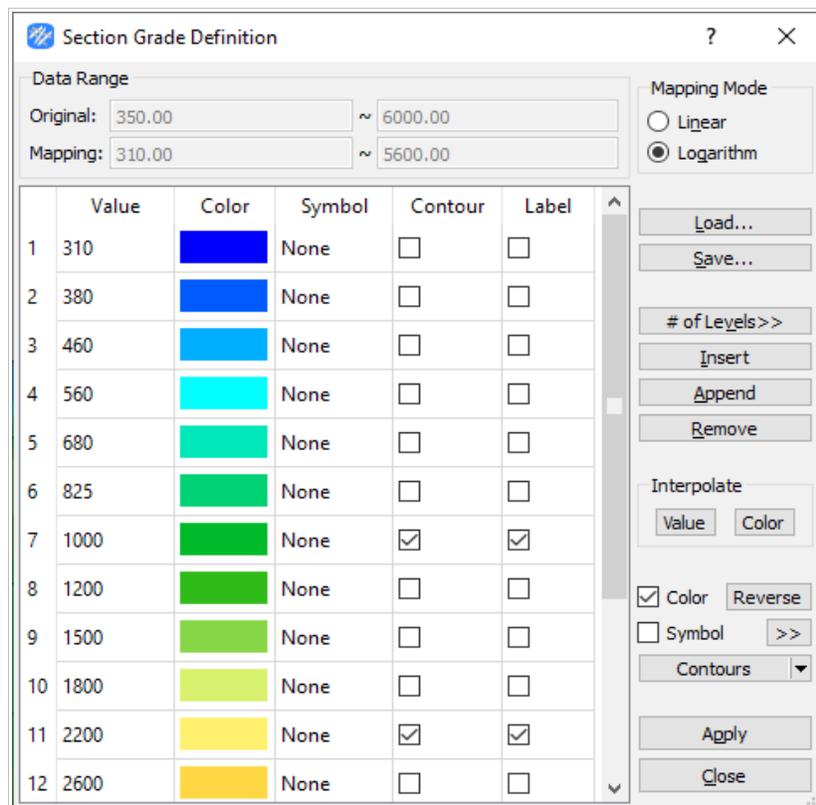


Figure 1-1: Section Grade Definition Dialog Box

## (2) **Geometry Display**

- The parameters for geometry display are automatically saved.
- The view of geometry can be printed or saved as an image.

## (3) **Curve Display**

- The curve property-related parameters defined in the **Curve Display** dialog box are automatically saved.

## Improvements to Individual Modules

The following lists the updates to each individual module in *Seismic Pro*:

### (1) *Front End*

- MiniSEED data format is supported.
- When single-station passive surface wave data are assembled, all of the filenames and related coordinates can be quickly loaded from a text or CSV file.
- Traces can be extracted by the range of either channels or offsets.

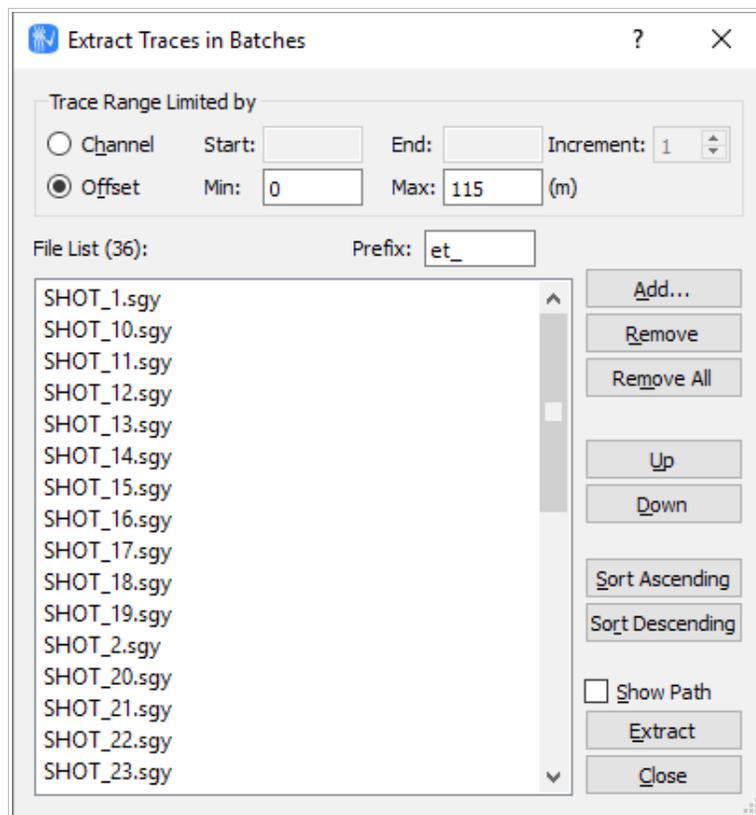


Figure 1-3: Extracting traces

- The receiver coordinates can be loaded from a text file for geometry assignment.
- X, Y, and Z coordinates of receiver locations are saved with first breaks in a text file.
- The number of samples can exceed 64kB for resampling.

- Files are listed by the last modified date in the file table.
- The file-type filters of seismic data are reorganized.

(2) *Reflector*

- The frequency spectra of seismic traces can be saved in a SEG-Y or ASCII file.

(3) *SF Imager*

- The ImpulseRadar GPR format is supported.

(4) *Refractor*

- The change of curve color for each layer is automatically saved.
- The value of apparent velocity is shown in the tooltip when it is tested in the picking window.

(5) *DW Tomo*

- The velocity and depth values under the cursor are shown when the mouse is moved inside the velocity section.
- The value of apparent velocity is shown in the tooltip when it is tested in the picking window.

(6) *DW Tomo3D*

- The shot points and receivers can be located in boreholes.
- The Z values of a velocity model can be viewed and exported in either elevation or depth.

(7) *Surface*

- Traces can be selected by the range of offsets.
- Muting data and deselecting traces can work together.
- The mute window can be shifted up or down to take into account the trigger delay.
- The cursor changes shape in relation to the manual or auto picking mode.

(8) *Surface Plus*

- An option to average CMPCC gathers over a user-defined bin size is added in building CMPCC gathers.

- The dispersion images generated with the ESPAC method are enhanced.
- The calculation of dispersion images is significantly sped up for long (e.g. 3-hour) passive surface wave records.
- To check the quality of passive surface wave data, the spectrum of each trace can be calculated based on a defined time window and displayed beside the trace view window.
- The spectra display of time segments is improved by labeling each time segment and speeding up the plotting for the long record of passive surface waves.
- Traces can be selected by the range of offsets.
- Muting data and deselecting traces can work together.
- The mute window can be shifted up or down to take into account the trigger delay.
- The cursor changes shape in relation to the manual or auto picking mode.

(9) *Surface RT*

- Automatically load seismic data with irregularly named files.

(10) *Microtremor*

- Unused segments are masked.
- MiniSEED format is supported.
- Predominant frequency is more accurately determined.

(11) *XW Tomo*

- More third-party picks formats are supported.
- The **Geometry** dialog box can be displayed without seismic data.

## Part 2 – Bug Fixes

The following bug fix applies to most of the modules in *Seismic Pro*:

The data value of the last sample in a trace was not set to zero when seismic traces were muted using the **Below** option.

Additionally, there are bug fixes in the following modules:

(1) *Modeling2D*

- The simulated seismograms cannot be saved.

(2) *Reflector*

- Gathers were unexpectedly changed from common-source to CMP order when the “Apply” button was clicked a second time.

(3) *Refractor*

- A base shot could not be correctly selected when coordinates of shot point locations were truncated in the list box.

(4) *DW Tomo*

- The labels of contour lines were plotted in the trimmed area for rough surface topography.

(5) *DW Tomo3D*

- The elevation was not taken into account when a velocity model was exported.
- The model view was improperly reset when a velocity model was built.
- The model geometry was inconsistent with the user-defined geometry, which was occasionally not snapped to a grid point.

(6) *Surface Plus*

- When the dispersion images calculated from active and passive surface wave data were merged, some of the dispersion analysis parameters were inconsistent with those defined in the main window if a single passive record was quite long.
- When the CMPCC gathers were created, the cross-correlated traces with small offsets were partially truncated.

- If some bad traces were excluded from passive surface wave records collected along a survey line over a rough surface topography, the irregular Y coordinates caused the incorrect interpolation of elevation data for plotting velocity section.
- When multiple passive surface wave records collected at the same location were integrated, those records were unexpectedly merged into a single record if the number of samples exceeded 64K.

(7) *XW Tomo*

- The default velocity range was sometimes too large for an initial model.
- The Z values of shot point and receiver coordinates in SEG-2 file headers were not loaded when individual seismic data files were integrated.

## Technical Support

If you have questions or need technical assistance, please contact us using the information below:

- Telephone: 1-403-4514886
- Email: [support@geogiga.com](mailto:support@geogiga.com)
- Web: [www.geogiga.com](http://www.geogiga.com)