




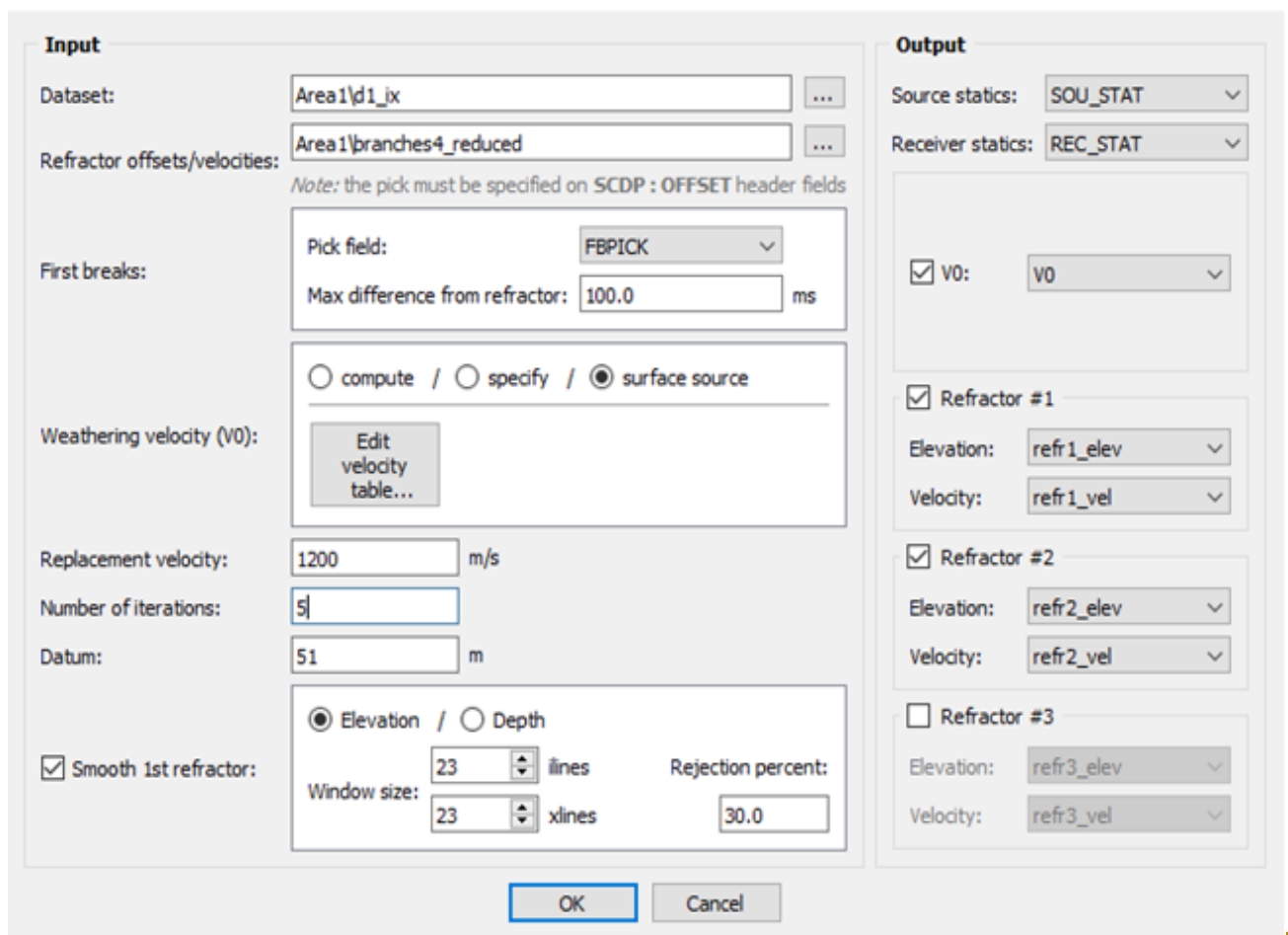
## RadExPro 2018.4 release notes

**WE WISH YOU HAPPY and  
PROSPEROUS NEW YEAR!**

with the latest **RadExPro** version -- **RadExPro 2018.4** !

The main novel of this release is the brand new module for **Refraction Statics** calculation. The module inputs a pre-stack dataset with the first break pick in a trace header (e.g. FB\_PICK) and another pick with refractor branches.

 Refraction Statics\*



**Input**

Dataset:  ...

Refractor offsets/velocities:  ...

*Note: the pick must be specified on SCDP : OFFSET header fields*

First breaks: Pick field:  Max difference from refractor:  ms

☐ compute / ☐ specify / ☒ surface source

Weathering velocity (V0):

Replacement velocity:  m/s

Number of iterations:

Datum:  m

☒ Smooth 1st refractor:  lines Window size:  xlines Rejection percent:

**Output**

Source statics:

Receiver statics:

☒ V0:

☒ Refractor #1

Elevation:  Velocity:

☒ Refractor #2

Elevation:  Velocity:

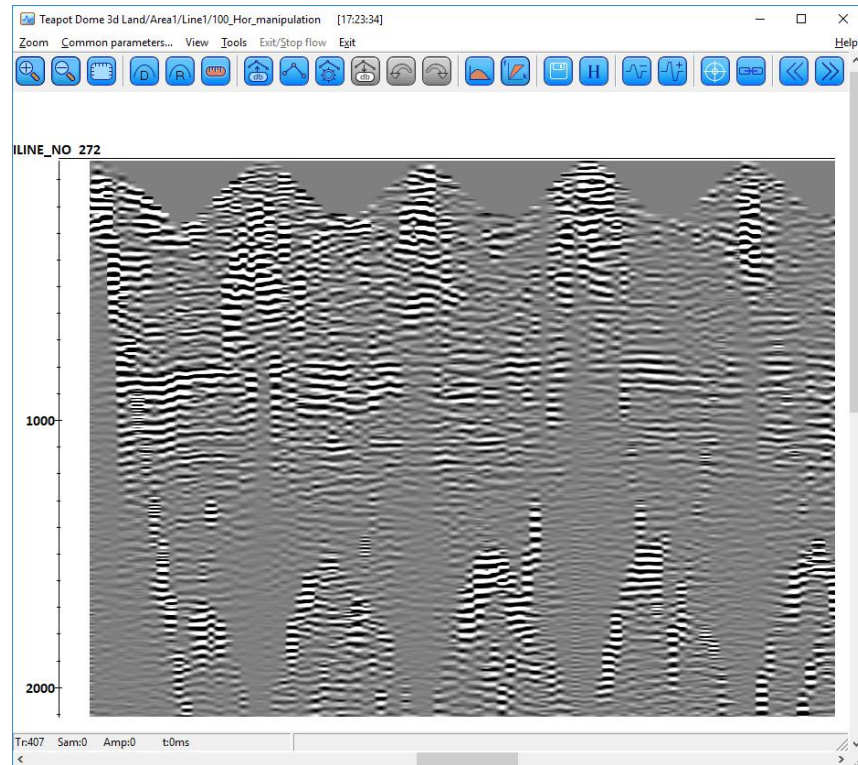
☐ Refractor #3

Elevation:  Velocity:

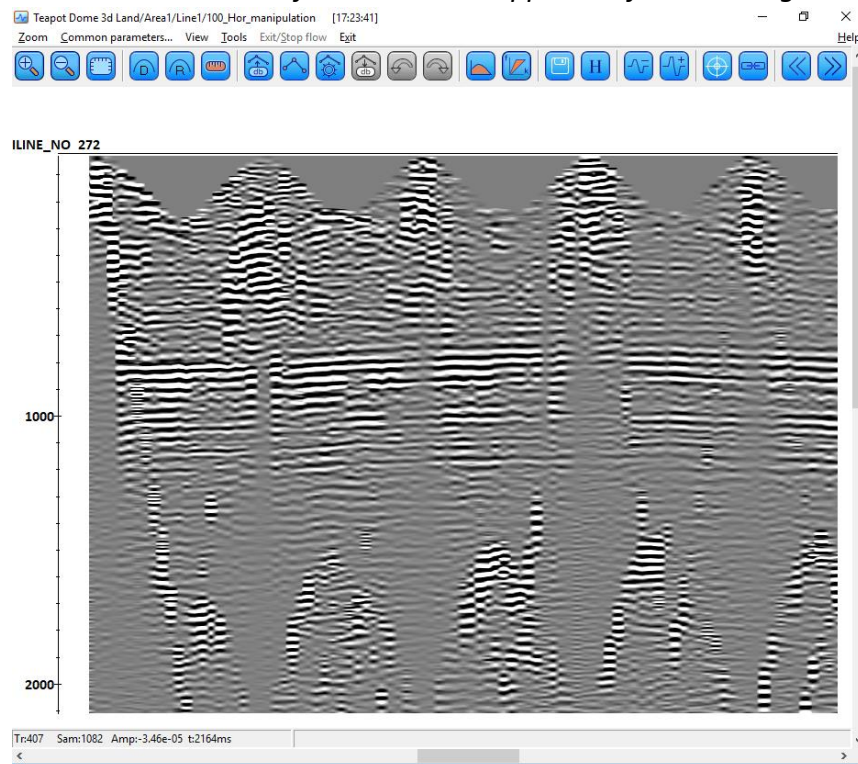
The main outputs are static shifts calculated for each source and receiver point, which can be applied to the traces using Apply Statics module.

Here is an example of how it works:

*Brute stack, elevation statics:*

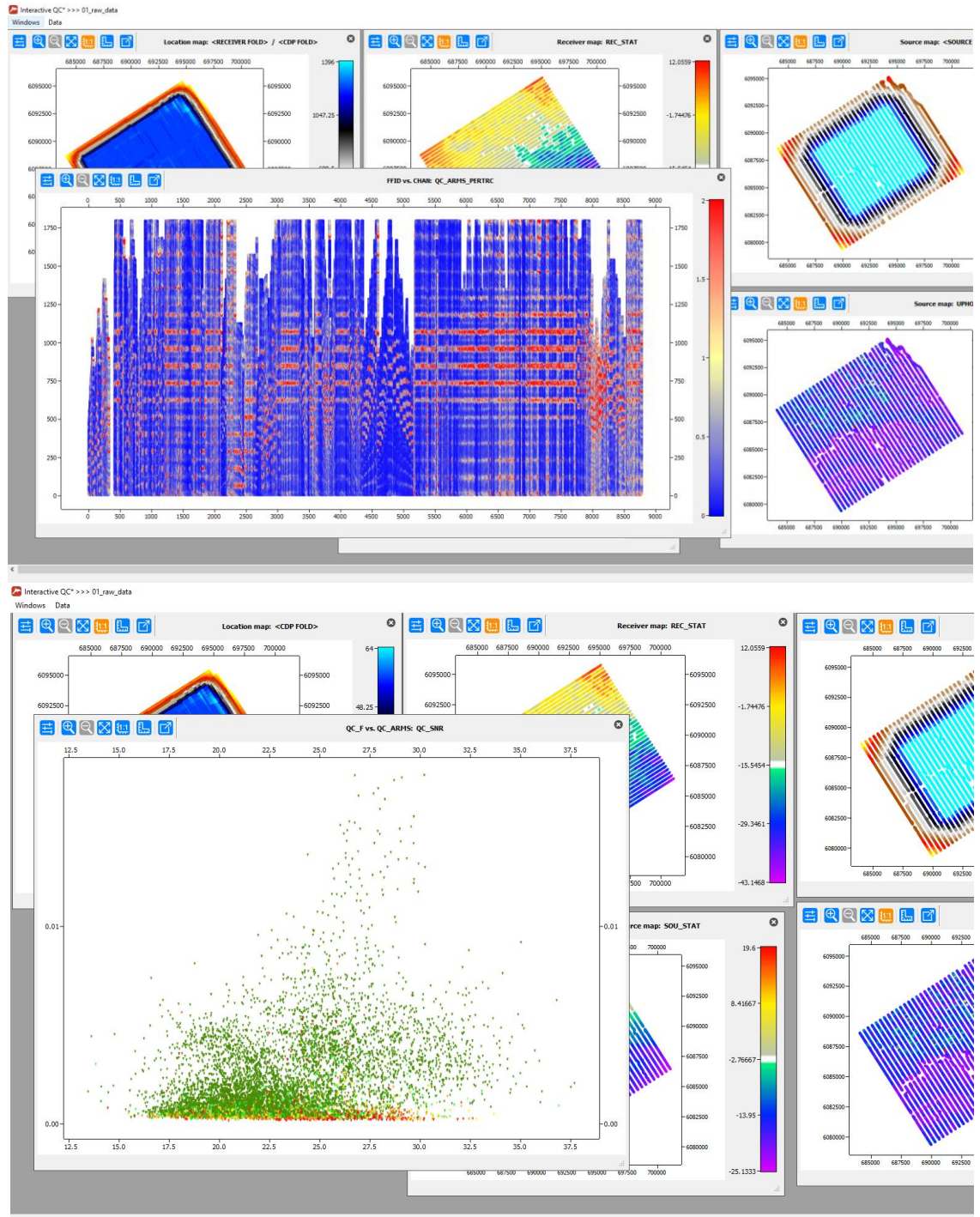


*The same with refraction statics applied before stacking:*



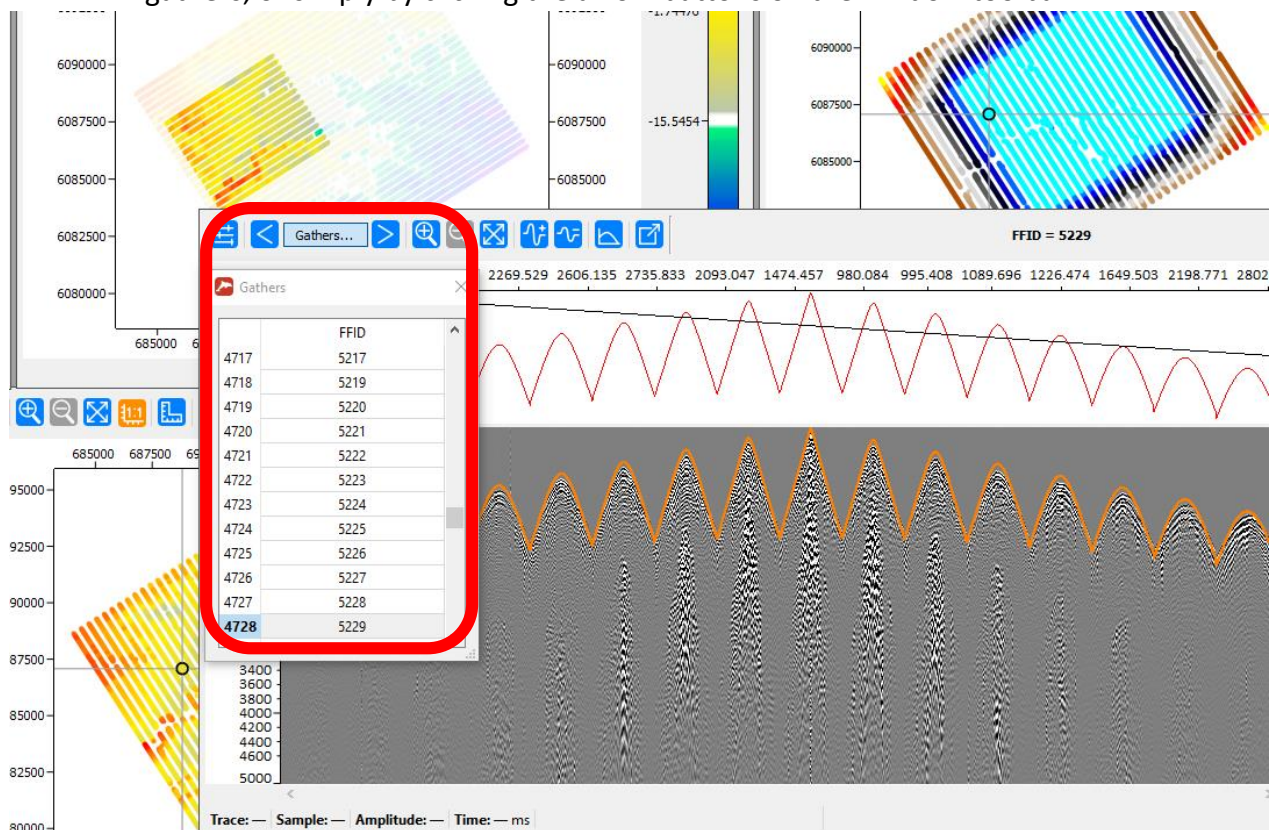
Other improvements are as following:

- We keep on improving functionality of the **Interactive QC** module, adding new features:
  - Now, beside the maps, you can create a crossplot, displaying one attribute vs. another one, color-coded by another header value. Now you can display here trace RMS amplitude plot in FFID vs. CHAN space or analyze interdependencies of various attributes:

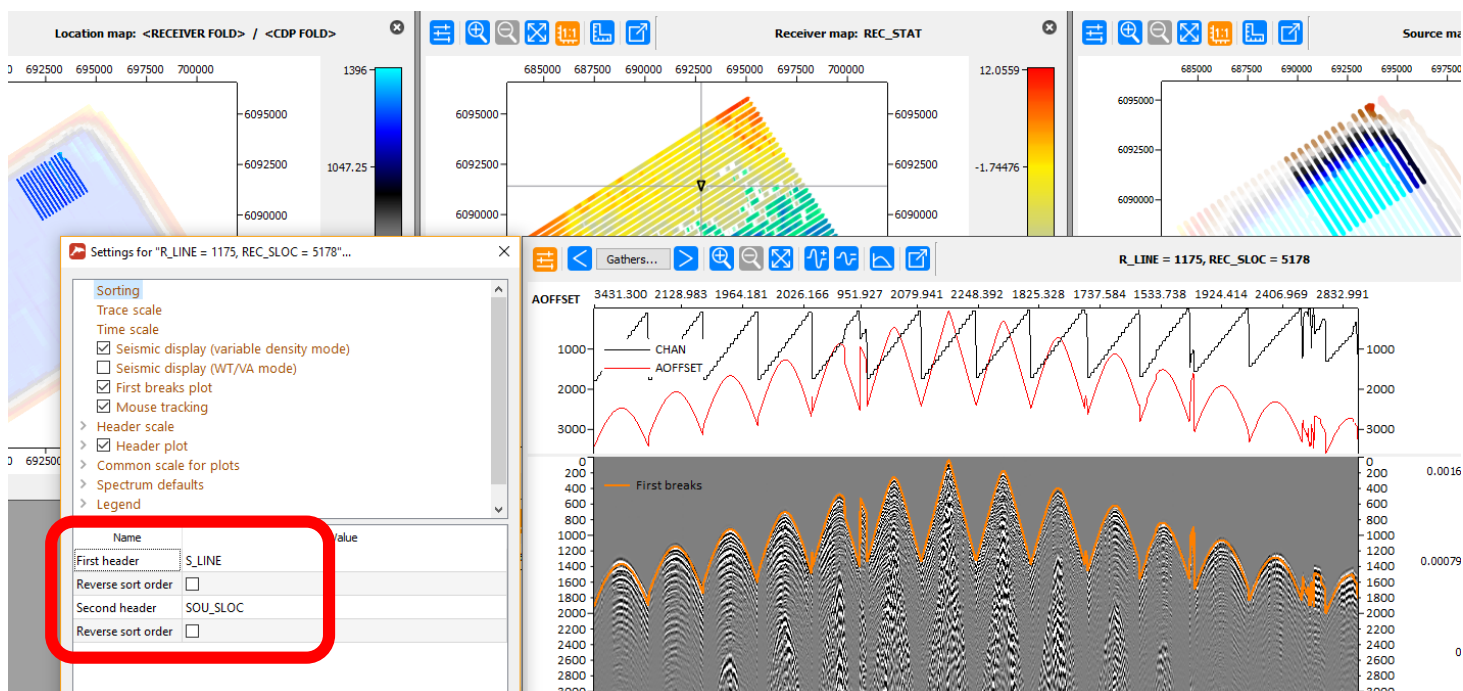




- Now, in the seismic display window of the **Interactive QC** module you can navigate through seismic gathers one by one using the list of all available gathers, or simply by clicking the arrow buttons on the window toolbar:



- Now you can use up to 2 headers to resort seismic gather in the seismic display window of the **Interactive QC**. The figure below shows a common receiver gather sorted by S\_LINE and SOU\_SLOC:



- We have improved WT/VA display in the seismic display window of the **Interactive QC**, so it looks similar now to that of the Screen Display.
- We have added scrolling hot-keys to the seismic display window of the **Interactive QC**, the same as in Screen Display: *left/right* arrow keys for one-step scroll, *Shift+left/right* – for one page scroll, *Ctrl+left/right* – scroll to next/previous gather.
- In the **Seismic Display** module, we have also improved WT/VA display, so it looks similar now to that of the Screen Display. Gain and bias are also made similar to those of Screen Display.
- In the **Seismic Display** module, we have added scrolling hot-keys: *left/right* arrow keys for one-step scroll, *Shift+left/right* – for one page scroll.
- In the **Ensemble QC** module, when evaluating QC attributes for a whole gather, now you can skip individual traces that were previously identified as bad ones, for them not to affect the result.

Ensemble QC Compute

Window

☒ Polygonal

☐ Square

Min offset: 1000 Max offset: 2000

Min time: 0 Max time: 2000

Площадь 1 target

☒ Skip bad traces if

QC\_COEF < 1

Amplitude

☒ Mean Trace Header

☐ 2D RMS AAXSLOP

☐ Mean 1D RMS

Signal / Noise ratio

☒ Compute Signal/Noise Ratio REC\_H2OD

Min frequency: 0 Max frequency: 125 Max shift: 10

Mode: ☒ Normal ☐ Use model trace ☐ Treat model trace as signal ☐ Treat first trace in each ensemble as model

Resolution

☒ Compute resolution SOU\_H2OD Max time of ACF to use: 50

Mode: ☒ Use mean ACF ☐ Use mean CCF ☐ Use separate CCFs

☐ Normalize CF (affects Apparent Frequency estimation also)

Frequency attributes

☒ Apparent frequency AAXFILT ☐ Peak frequency AAXFILT

Mode: ☒ Number of sign changes ☐ ACF ☐ Mean ACF ☒ Average amplitude spectra

☐ Band width AAXFILT ☐ Average integral values

☒ At 70 % of peak amplitude Minimum window length: 8 samples

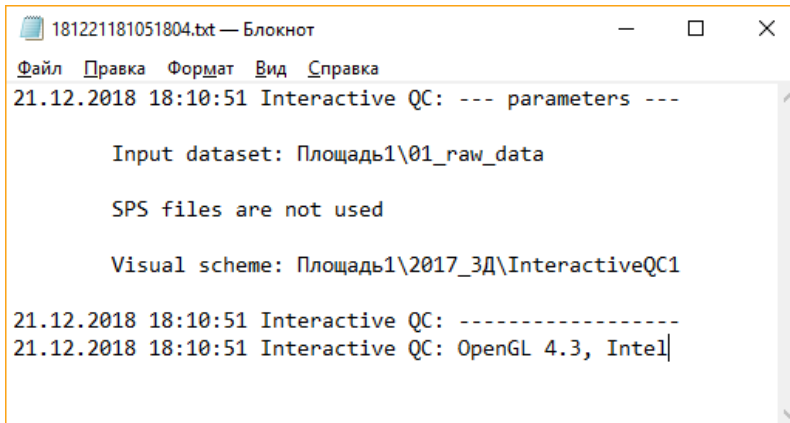
☐ Square under amplitude spectrum curve / maximum amplitude

OK Cancel

- In the **Trace Header Math** module, we have added a new function:

*rand(N) – returns a random value within the ranger of [1, N]*

- The **Ensemble Redefine** module can now work with 3 header fields – one for new ensemble definition and 2 sorting keys within ensemble.
- A brand new **Trace Derivative** module calculates a derivative of each trace.
- We have added date to **log file records**:

A screenshot of a Notepad window titled "181221181051804.txt — Блокнот". The window contains log file records. The first record is "21.12.2018 18:10:51 Interactive QC: --- parameters ---" followed by "Input dataset: Площады1\01\_raw\_data", "SPS files are not used", and "Visual scheme: Площады1\2017\_3Д\InteractiveQC1". The second record is "21.12.2018 18:10:51 Interactive QC: -----". The third record is "21.12.2018 18:10:51 Interactive QC: OpenGL 4.3, Intel".

```
181221181051804.txt — Блокнот
Файл  Правка  Формат  Вид  Справка
21.12.2018 18:10:51 Interactive QC: --- parameters ---
      Input dataset: Площады1\01_raw_data
      SPS files are not used
      Visual scheme: Площады1\2017_3Д\InteractiveQC1
21.12.2018 18:10:51 Interactive QC: -----
21.12.2018 18:10:51 Interactive QC: OpenGL 4.3, Intel
```

- Some **bugs were fixed**:
  - Underperformance of NMO/NMI module when run in more than 1 thread – **FIXED!**
  - Problems when number of lines in one area exceeds 248 – **FIXED!**
  - SharpSeis stability issues – **FIXED!**
  - Velocity interpolation artifacts in case of complicated velocity functions – **FIXED!**
  - Artefacts in Predictive Deconvolution results when trace length close to a power of 2 (e.g. close but not equal to 512, 1024, etc.) – **FIXED!**
  - Parallelization of Horizon Manipulation module did not work – **FIXED!**

As usual, if you are on maintenance, please contact us at [support@radexpro.com](mailto:support@radexpro.com) and get your update for free.

**Please, note that in early January we are closed for Orthodox Christmas holidays until 9 January 2019. We wish you Happy Holidays and all the best for the New Year 2019!**

*Yours,*

**RadExPro Team:**

Alexand Alekhin, Petr Alexandrov, Pavel Bannikov, Sergey Buryak, Vera Ivanova, Artem Kats, Andrey Kochkin, Mikhail Poluboyarinov, Pavel Shashkin