Mini32 software

Quick Guide

Jiří Kučera, September 2024

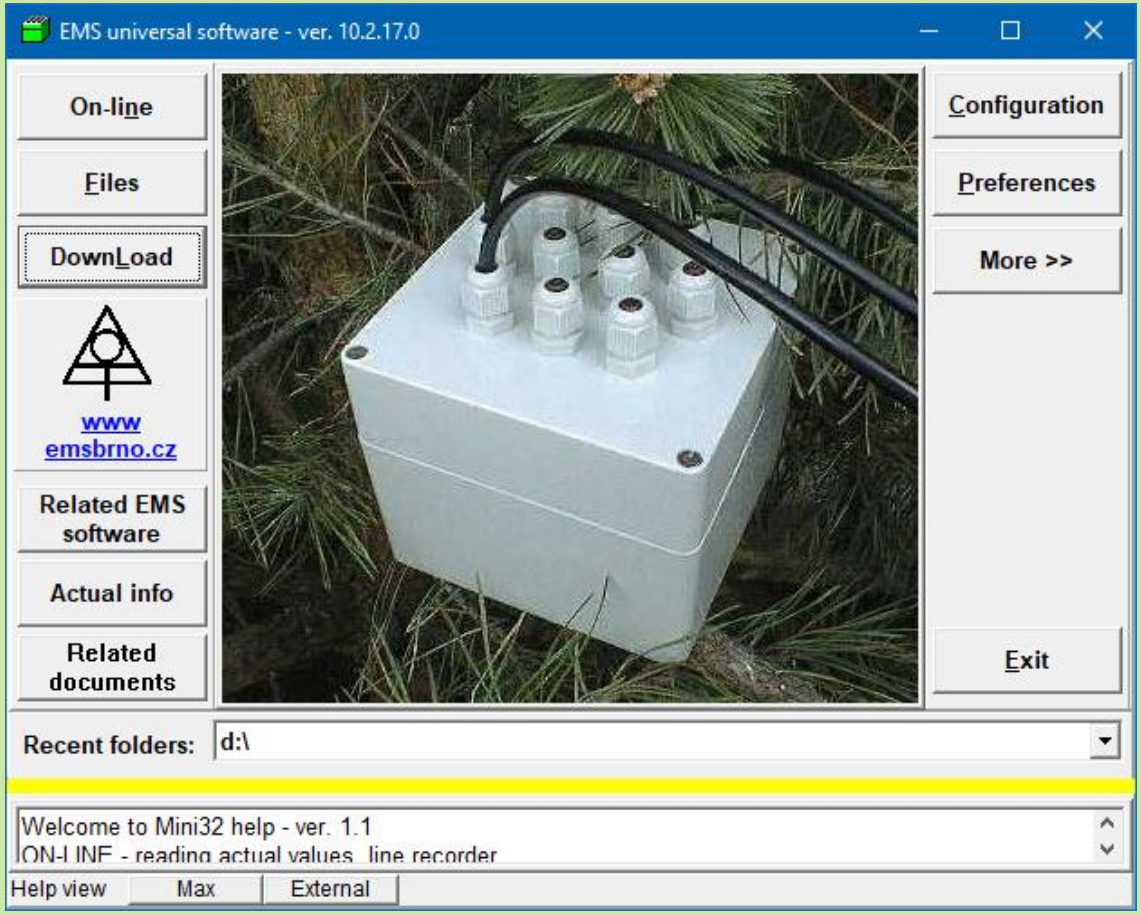
Software general description – main screen

Operation with data

- *On-line operation with actual values*
- *Operation with data files*
- *Download in more modes*

Way out of Mini32

- *Opens related software*
- *Opens actual info on web site*
- *Opens useful information documents*



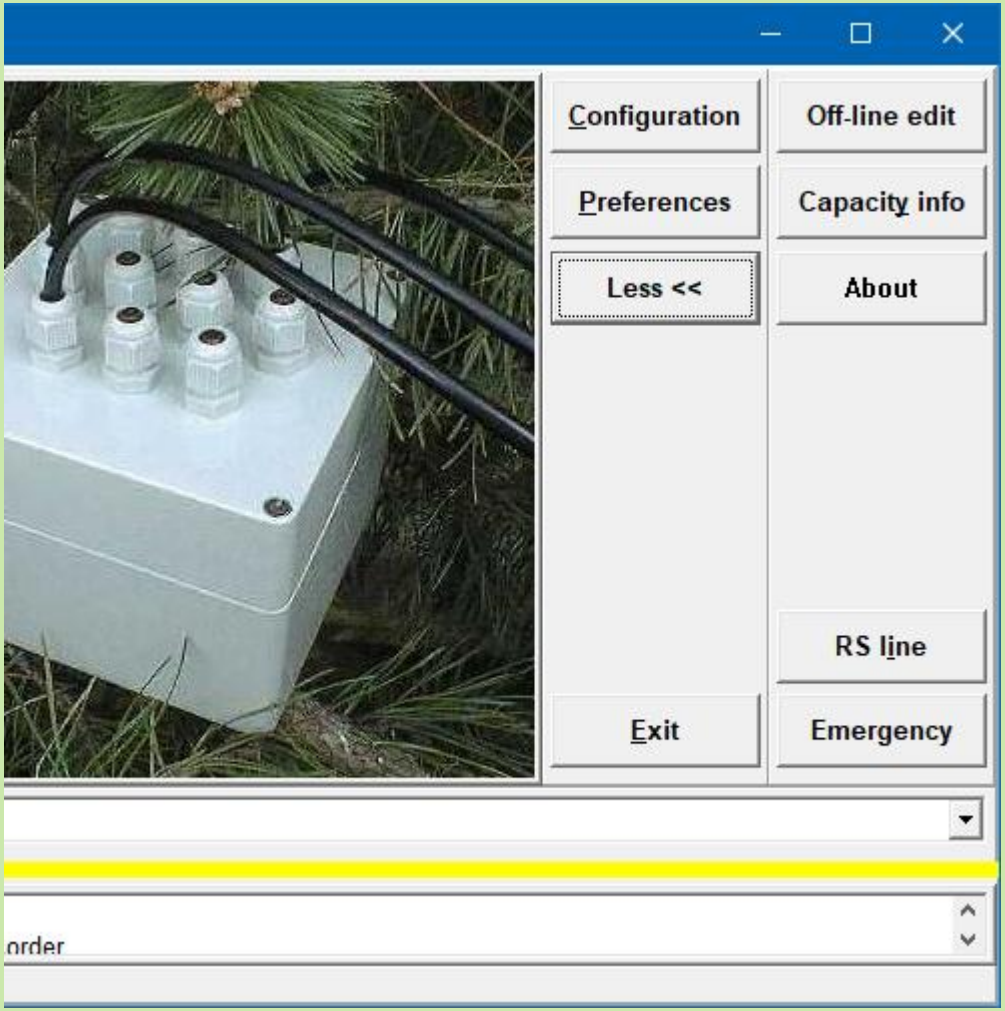
Configuration

- *Datalogger setting*
- *Program configuration*
- *Opens next options*

Online Help

- *The text can be read in two ways - by moving the yellow line up or in the separate window.*

Software general description – extended main screen



- *Preparing configuration according a template files for later upload to the datalogger*
- *Calculation memory and battery capacity of supported dataloggers*
- *List of supported systems*

- *Connection to RS multiplexer (obsolete)*
- *Firmware upload*

Program specific features

Pros

- Ready for processing of long-time data series
- Graphic view as main guide through data
- All operation accessible from the graphics screen are related only to displayed data set
- Context help on each page
- Number of useful trick is always larger than you suppose

Cons

- Unusual user interface (layout)
- Creating new files after most operations
- Limited ability to go back a step in processing

Operation with opened file.

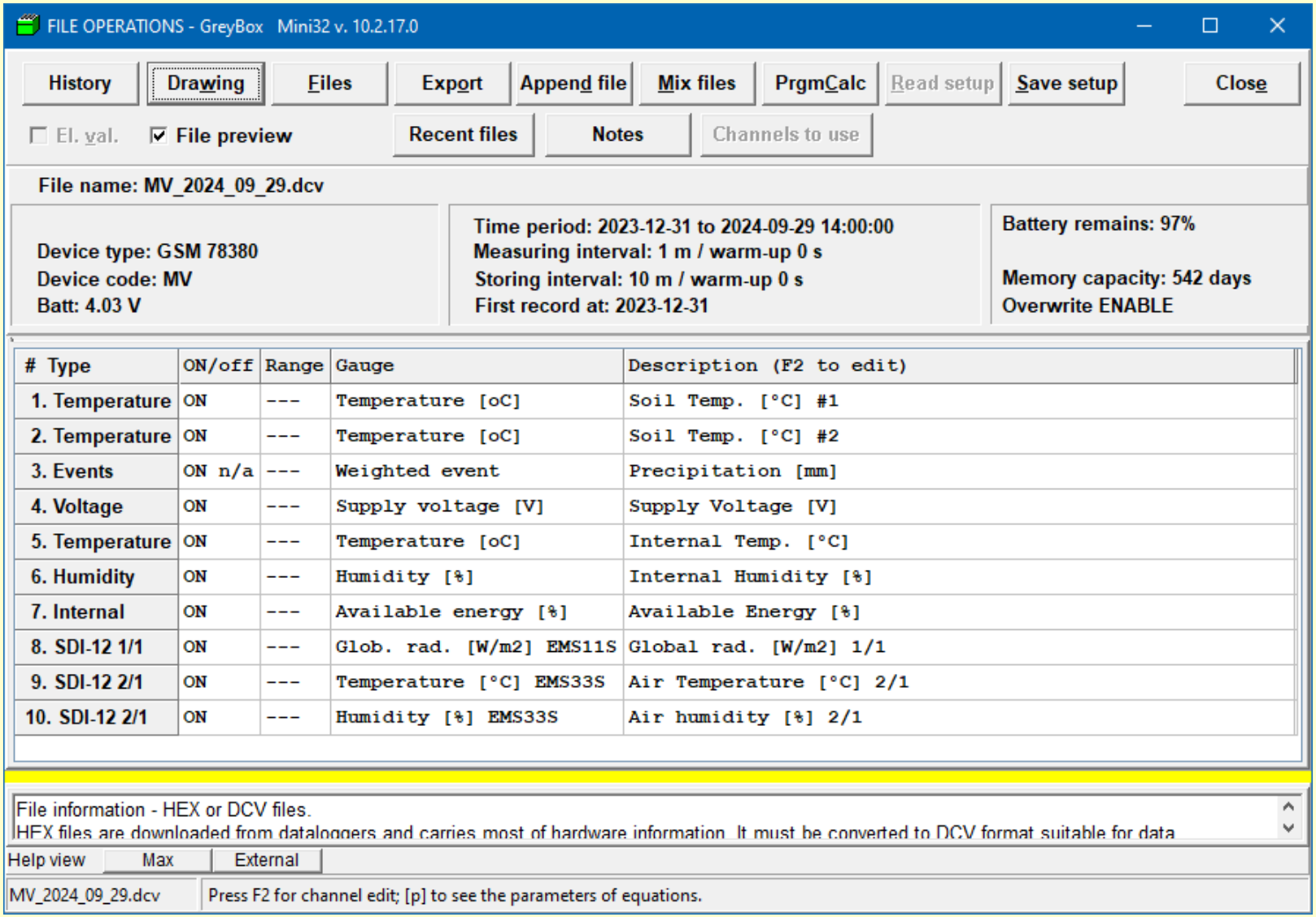
Operation with opened file.

- file preview during browsing in file manager (HEX and DCV files)
    - data structure and configuration
    - file history including performed calculations
    - file notes
    - preview of the last chart just before closing the file

- drawing variables in two windows
- fast zoom and move along time
- convenient editing of variable values
- deletion of erroneous data in graphics
- fast conversion to a different time interval between records
- fast statistics of displayed values
- fast regression calculation
- calculation of non-linear multiregression according to user's equations
- dual data display (over time and as a scatter plot)
- deletion of values in the scatter plot view
- synchronous display of variables in an additional open file
- extensive pop-up menus in the graphic and many useful tricks for efficient work

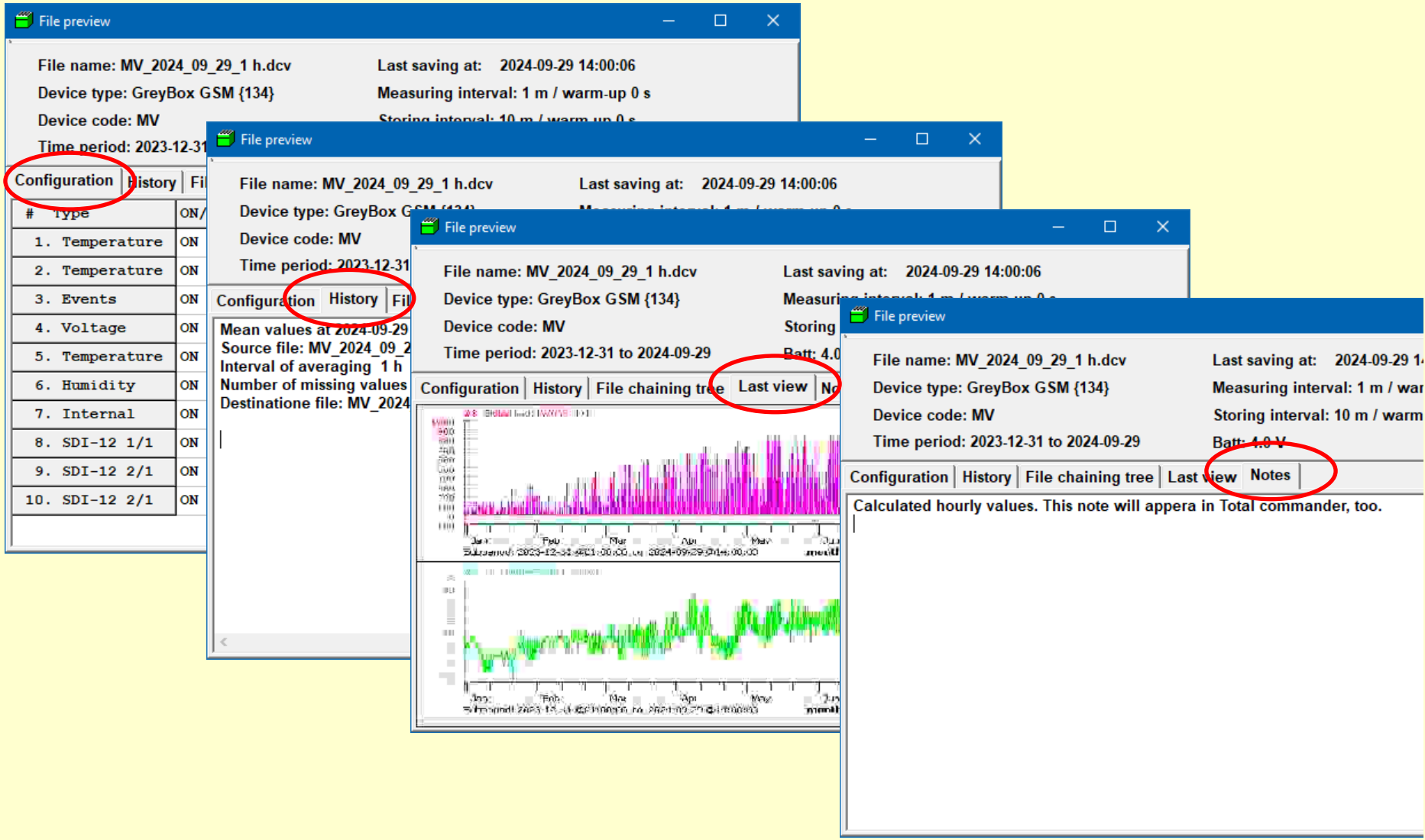
Operation with opened file.

Hardware information and channel configuration of an opened file.



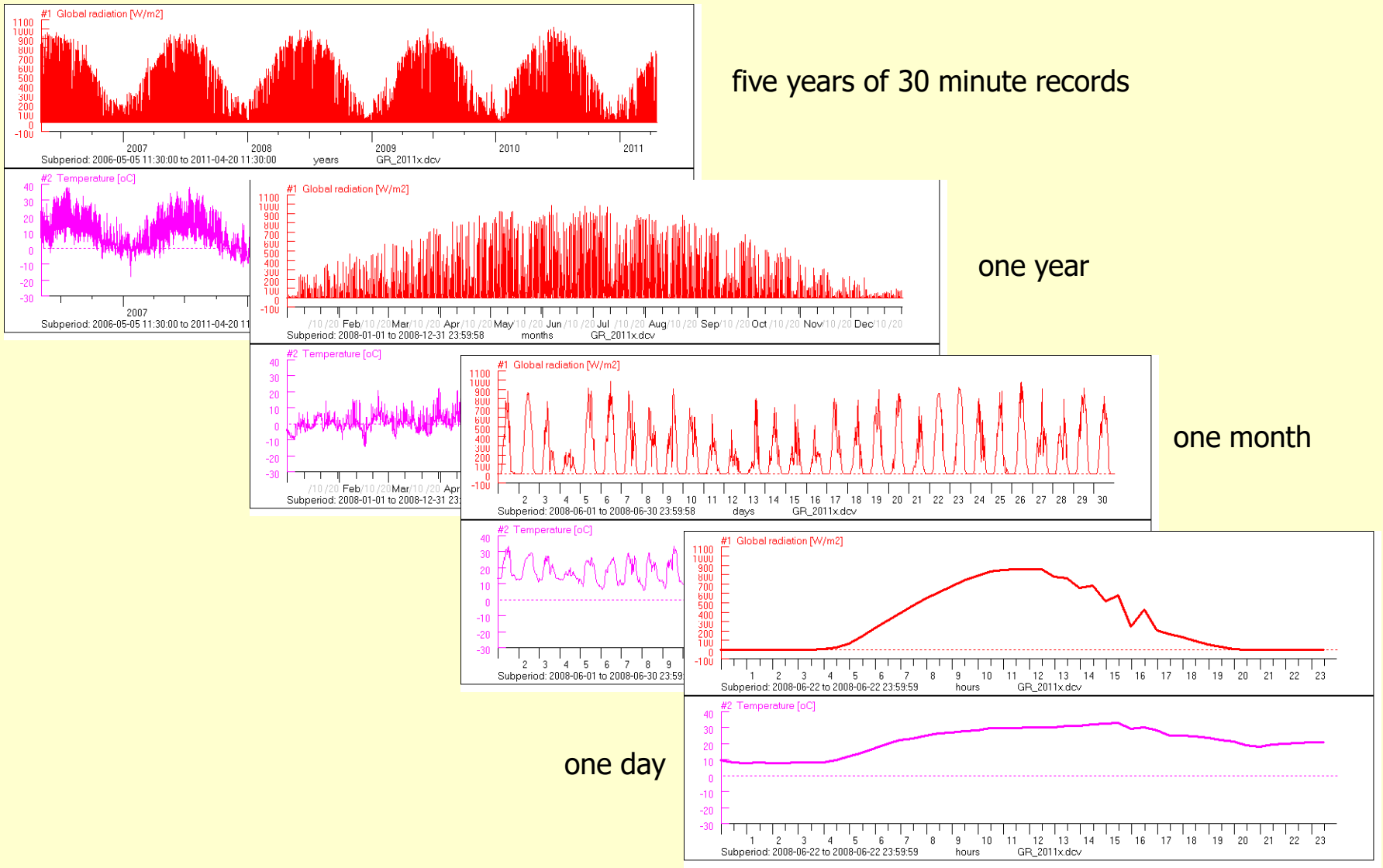
Operation with opened file

Items in “History” tab.



Operation with opened file

Drawing variables - zooming in five seconds



five years of 30 minute records

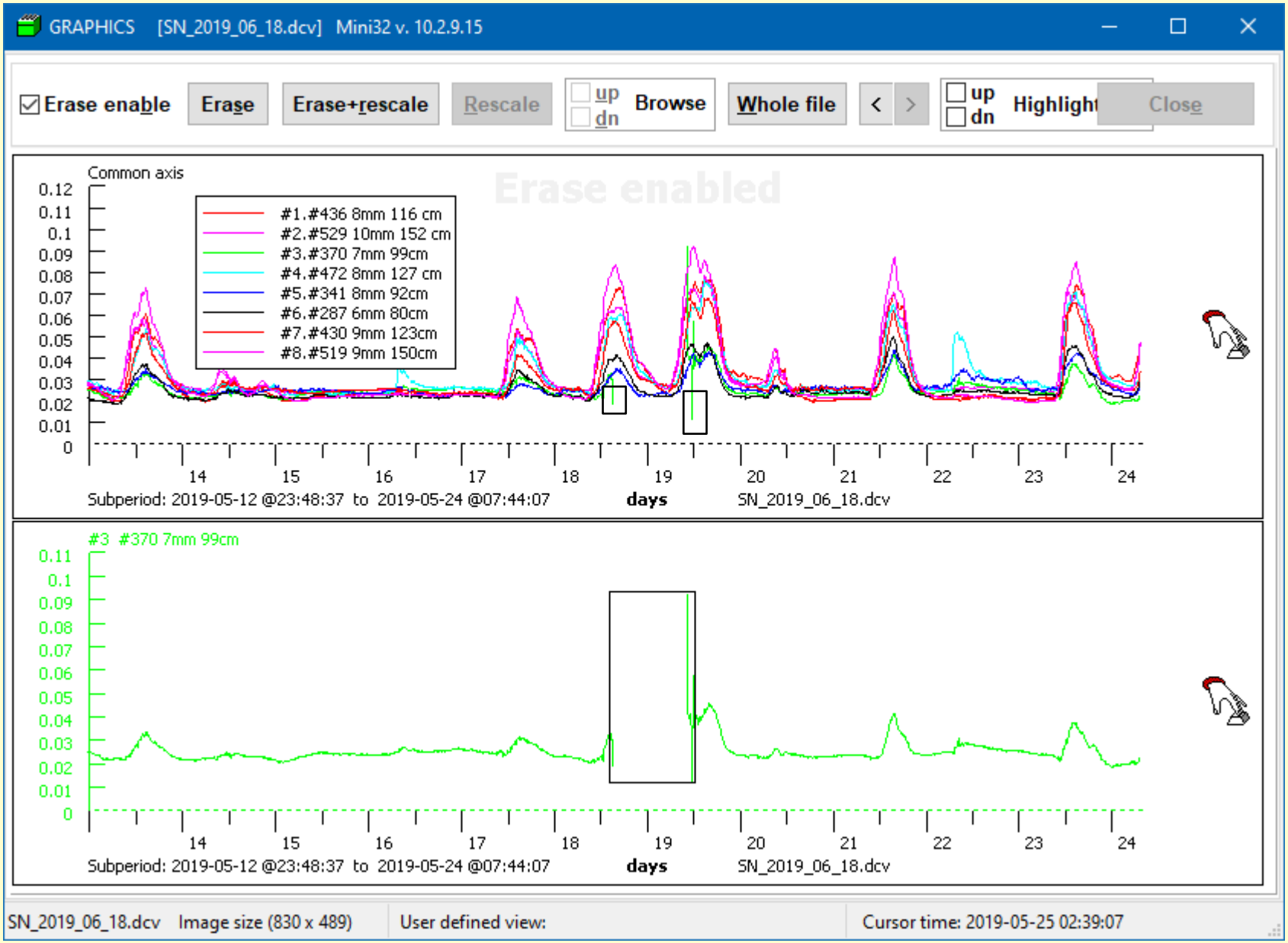
one year

one month

one day

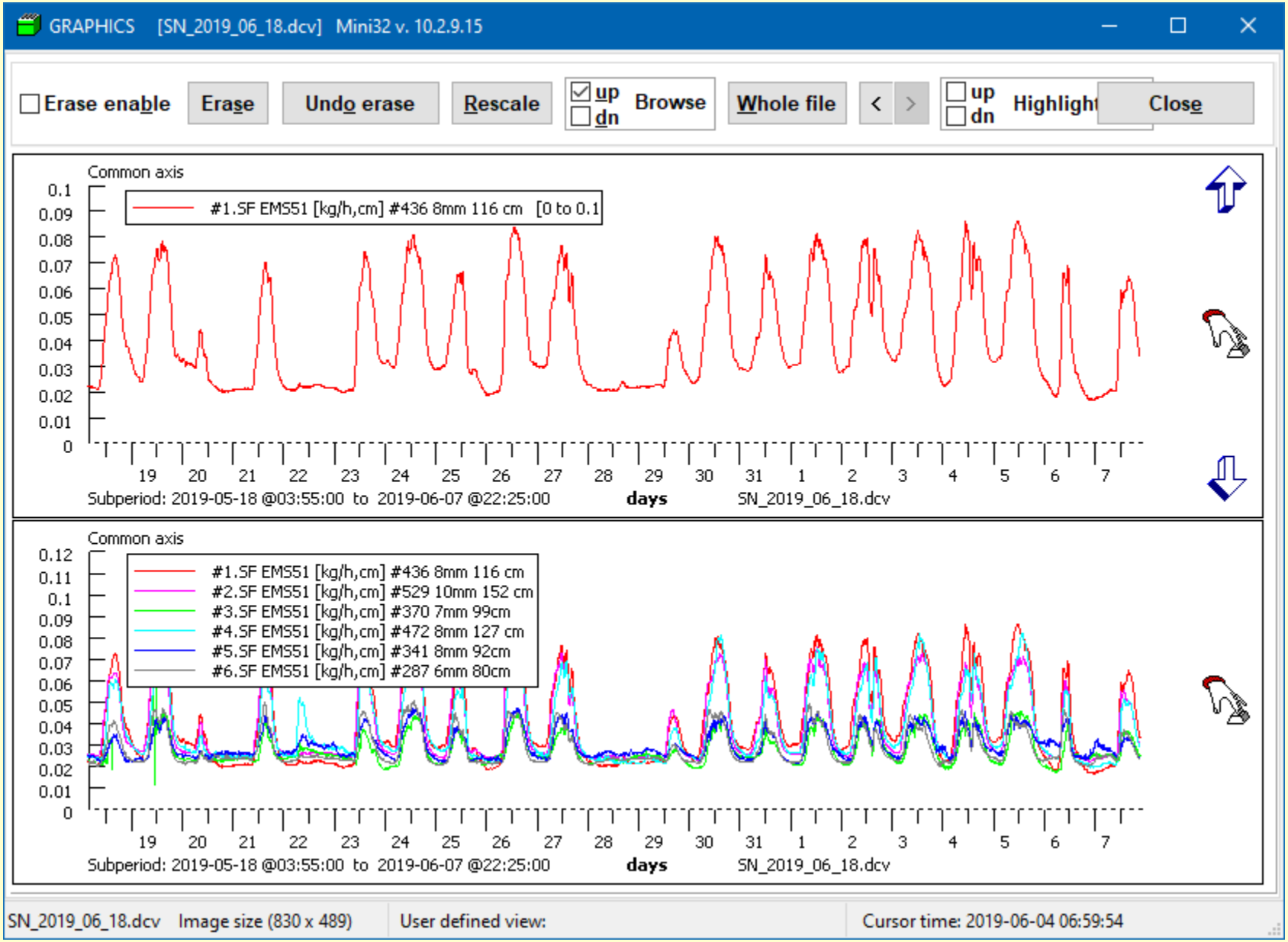
Operation with opened file.

Delete erroneous values framed in rectangles.



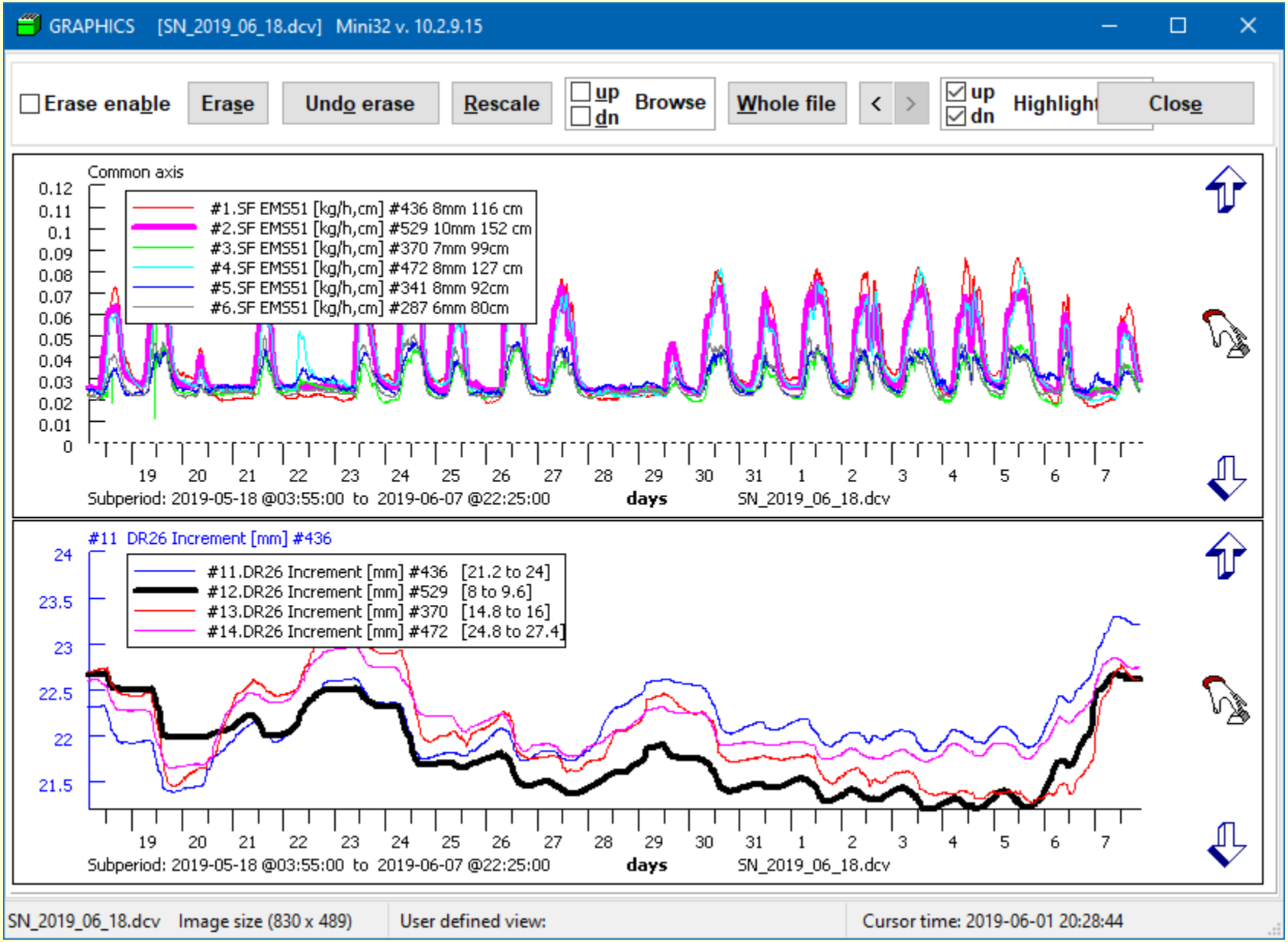
Operation with opened file.

Browsing through variables - in upper window.



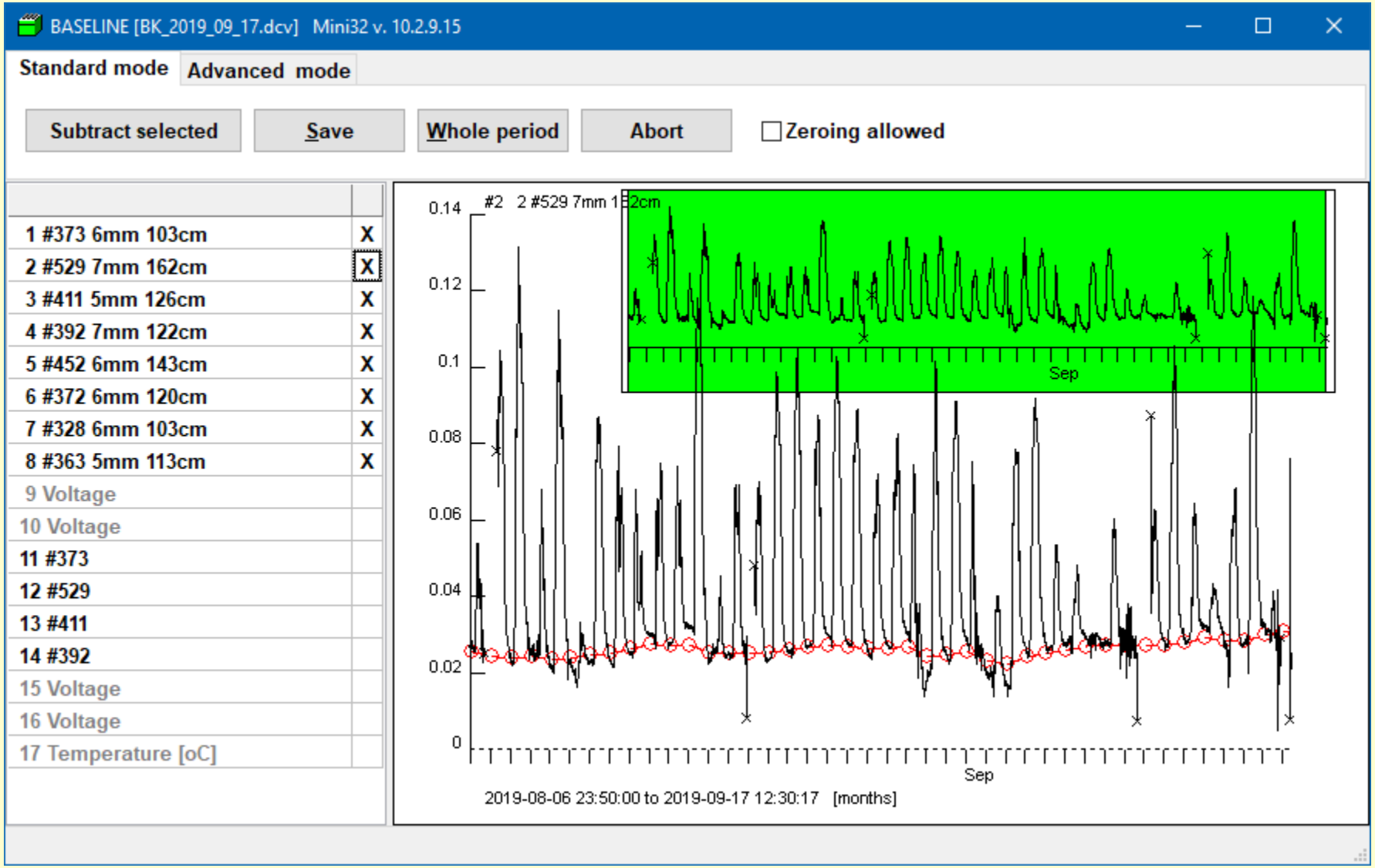
Operation with opened file.

Recognition of variables – in lower window.



Operation with opened file.

Baseline subtraction (mainly intended for sap flow measurement).

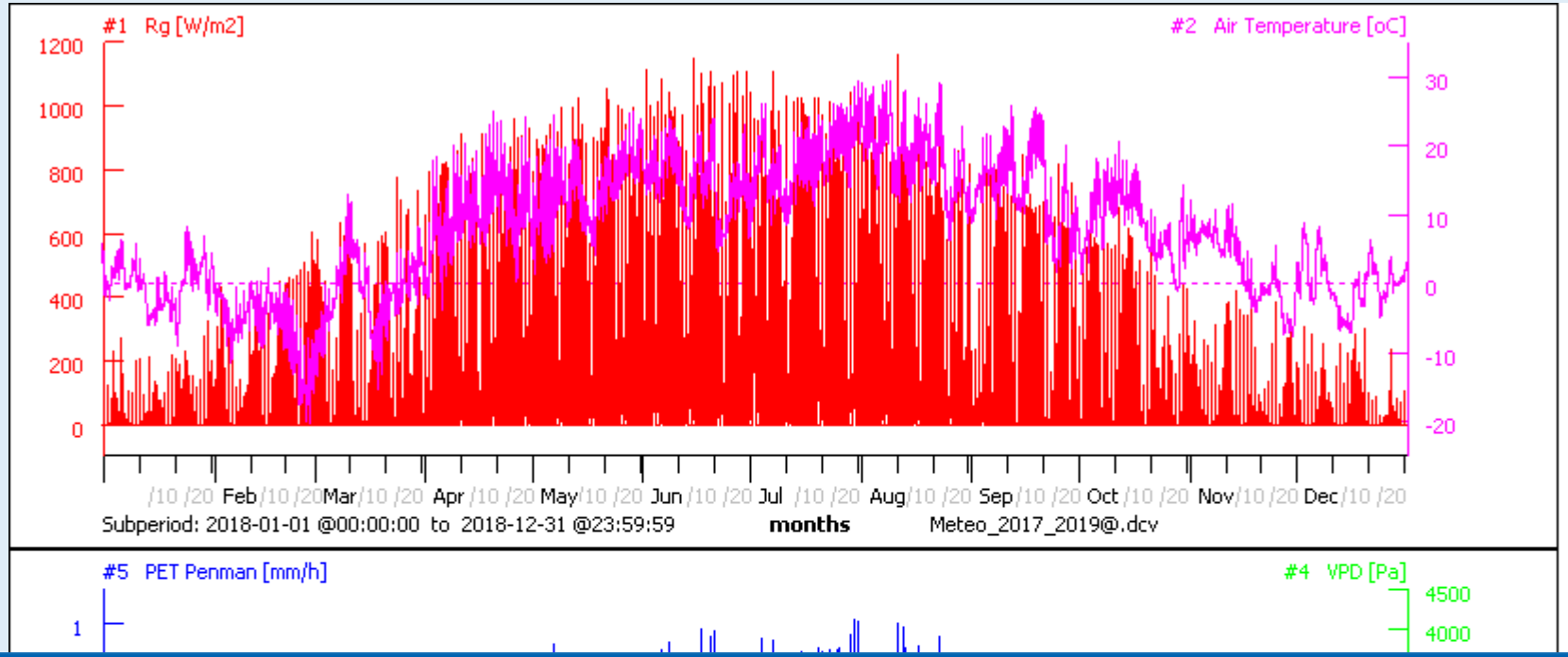


Items of pop-up menu in graphics screen.

It concerns only the displayed data!

Items of pop-up menu

Variable statistics



STATISTICS - [Meteo_2017_2019@.dcv] Mini32 v. 10.2.9.15

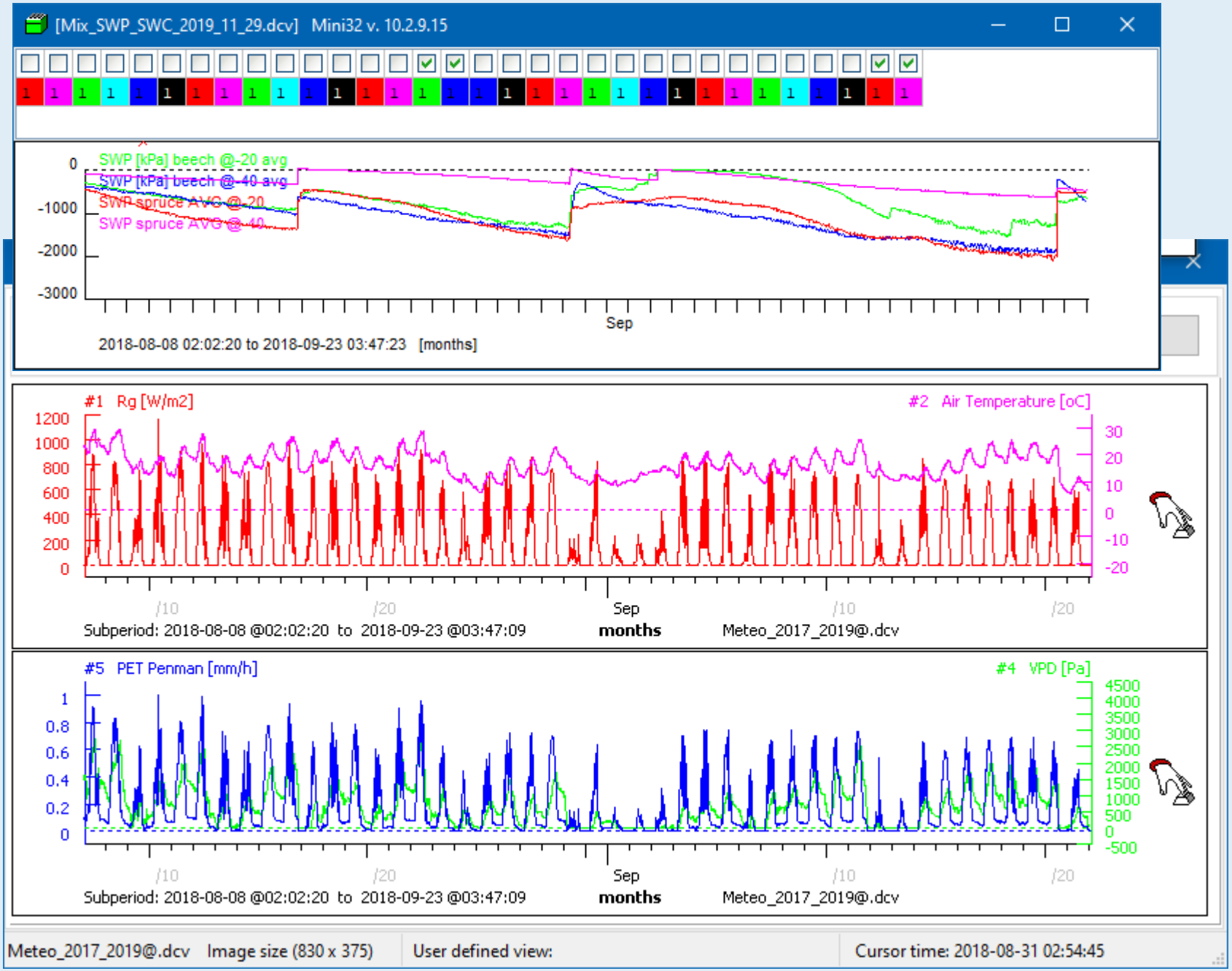
Save to file | Copy to clipboard | ☐ All variables | ☐ CSV format | Close

File name: Meteo_2017_2019@.dcv (calculated only from displayed values)

Time period: 2018-01-01 - 2018-12-31 23:59:59

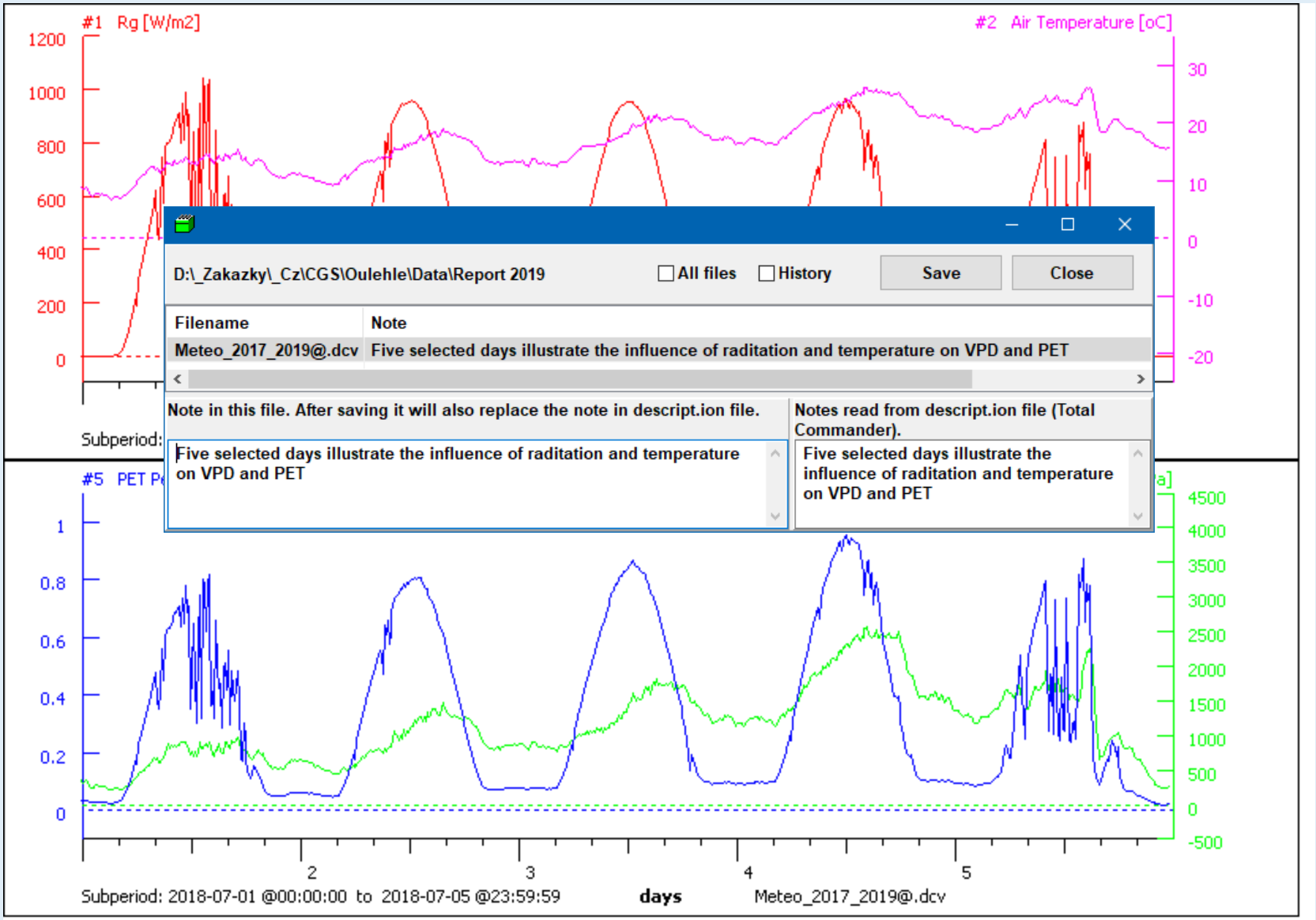
Var.	Description	Min	Max	Average	Records	Total	Std. dev.
#1	Rg [W/m2]	-0.1347328	1160.166	134.2007	52559	7053454	226.5843
#2	Air Temperature [oC]	-20.1002	29.5062	7.677511	52557	403506.9	9.241148
#4	VPD [Pa]	0	3020.046	323.8629	52557	1.702126E007	483.3285
#5	PET Penman [mm/h]	-7.476653E-005	1.011505	0.1203598	52557	6325.751	0.1951578

Items of pop-up menu - subgraph



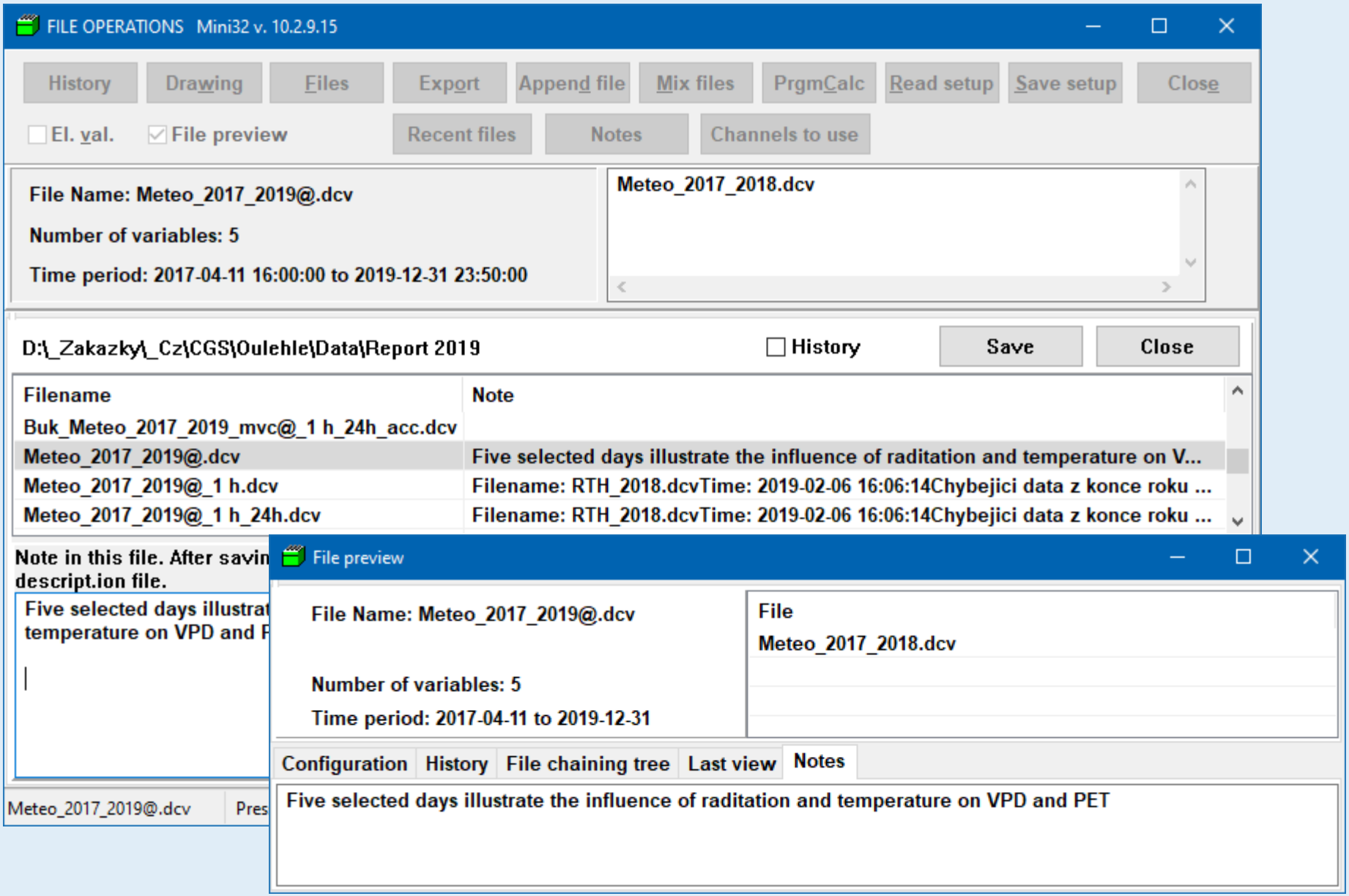
Items of pop-up menu

Notes



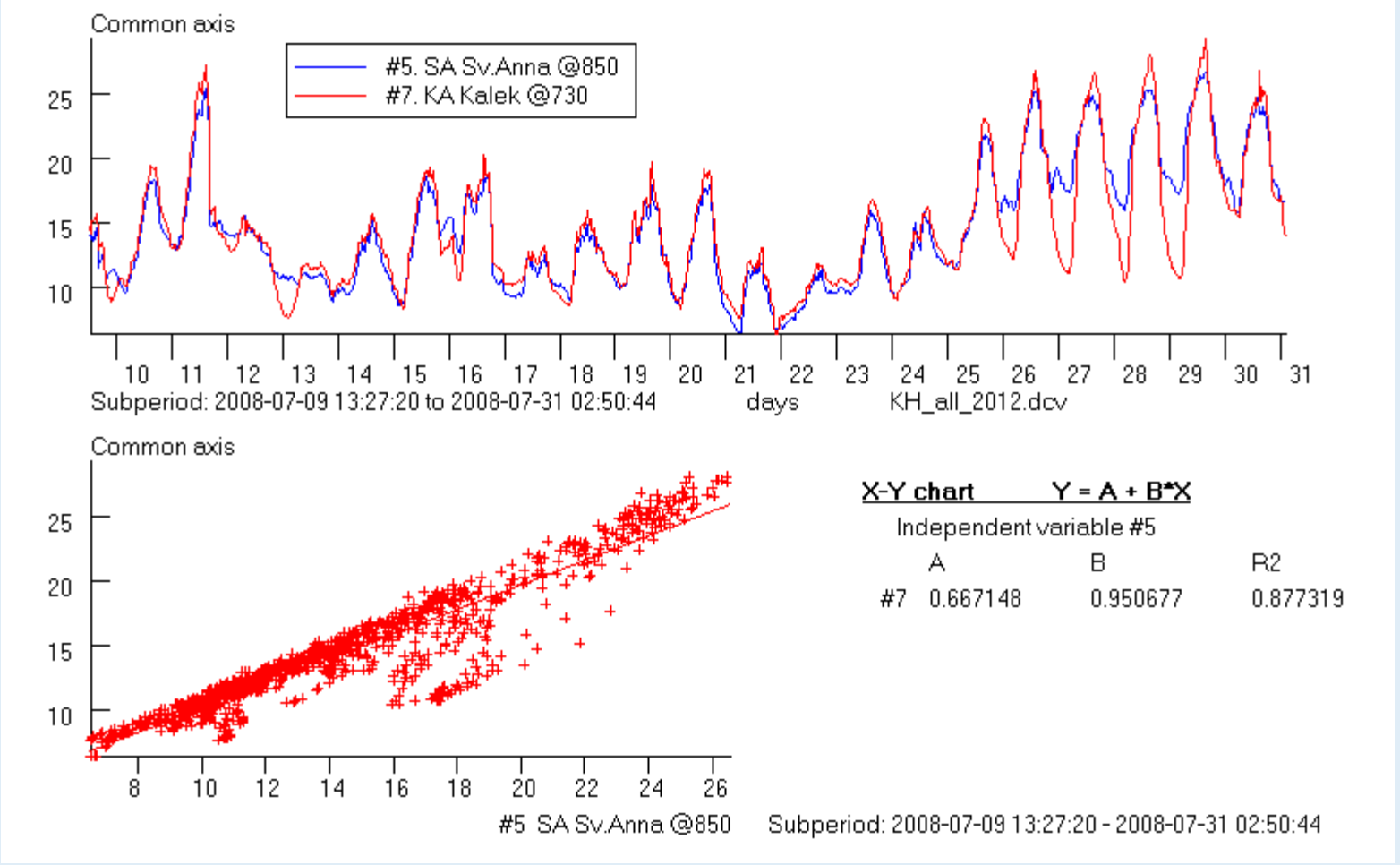
Items of pop-up menu

Notes are visible also in file history and in file browser. They are shared with file comments in Total commander (descript.ion file).



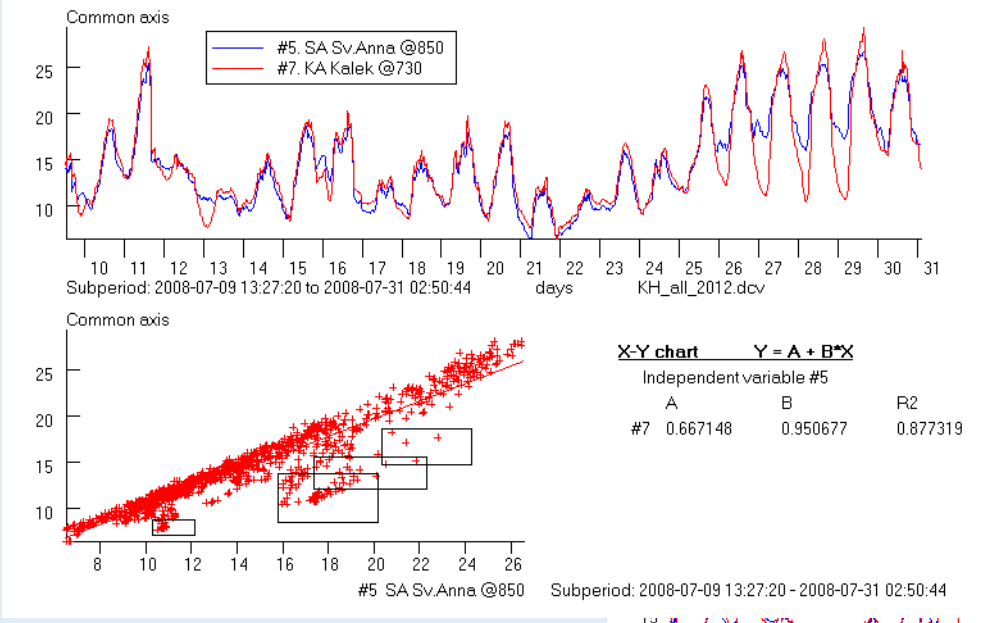
Items of pop-up menu

Fast regression – double view



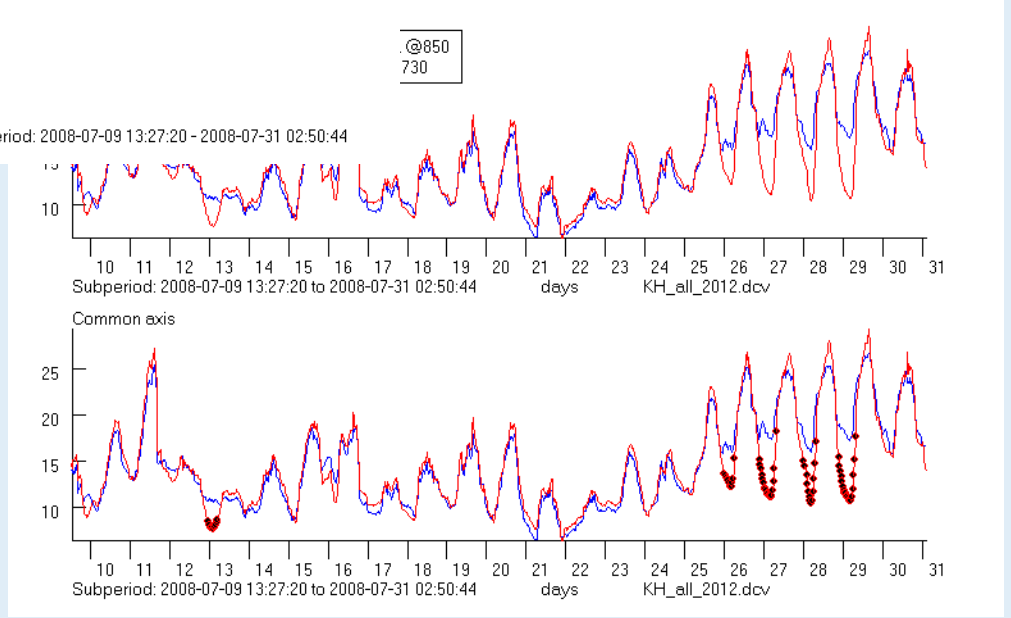
Items of pop-up menu

Scatter plot erasing



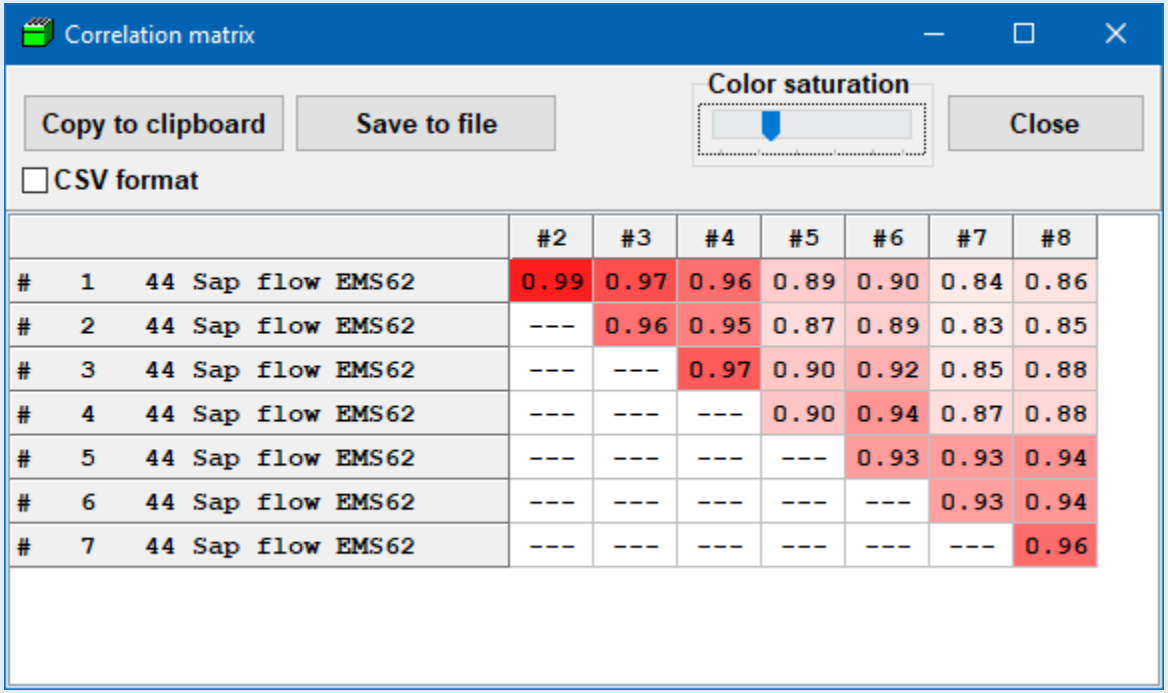
Selecting points

Ready for erase



Items of pop-up menu

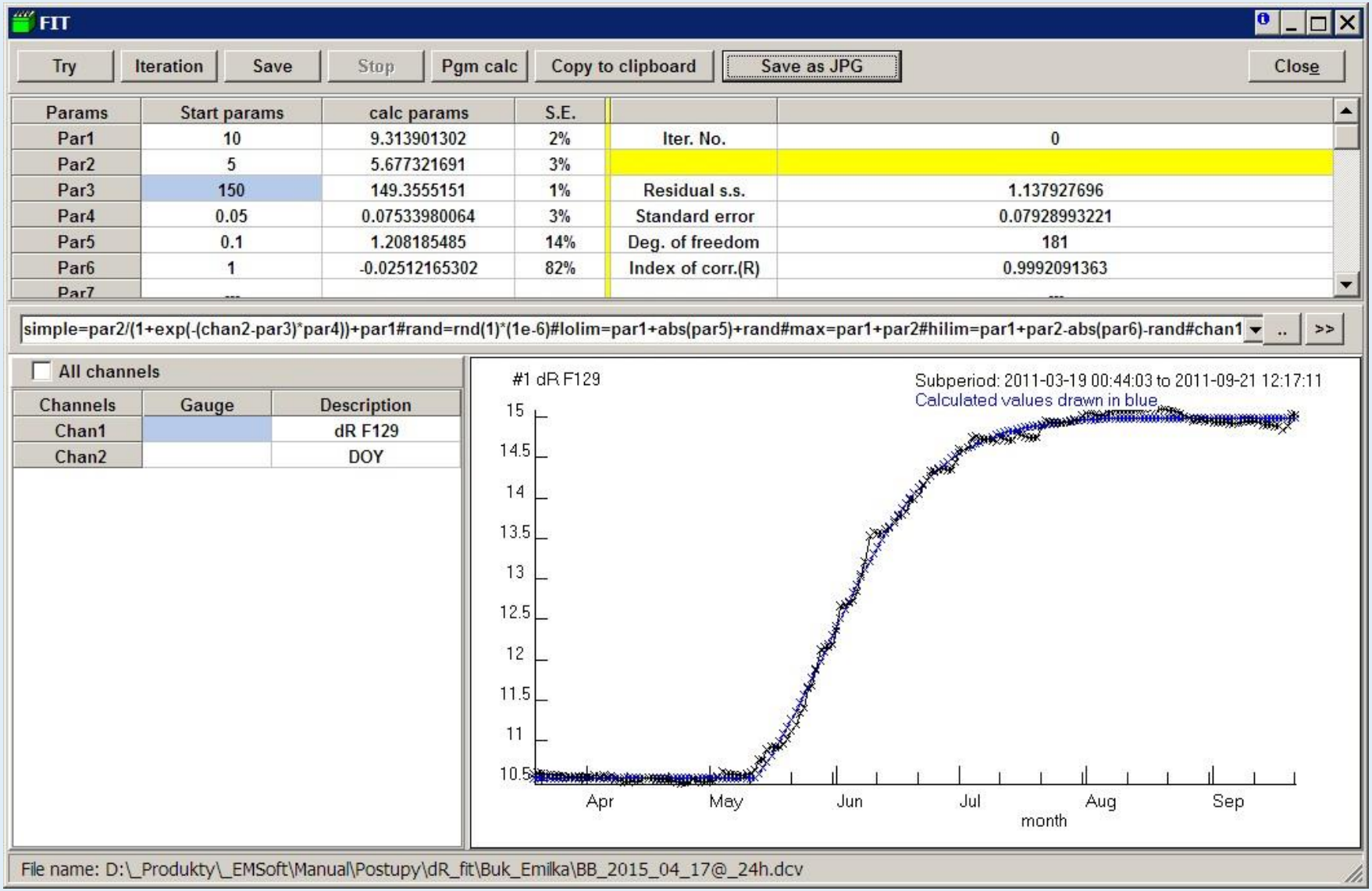
Correlation matrix



	#2	#3	#4	#5	#6	#7	#8
# 1 44 Sap flow EMS62	0.99	0.97	0.96	0.89	0.90	0.84	0.86
# 2 44 Sap flow EMS62	---	0.96	0.95	0.87	0.89	0.83	0.85
# 3 44 Sap flow EMS62	---	---	0.97	0.90	0.92	0.85	0.88
# 4 44 Sap flow EMS62	---	---	---	0.90	0.94	0.87	0.88
# 5 44 Sap flow EMS62	---	---	---	---	0.93	0.93	0.94
# 6 44 Sap flow EMS62	---	---	---	---	---	0.93	0.94
# 7 44 Sap flow EMS62	---	---	---	---	---	---	0.96

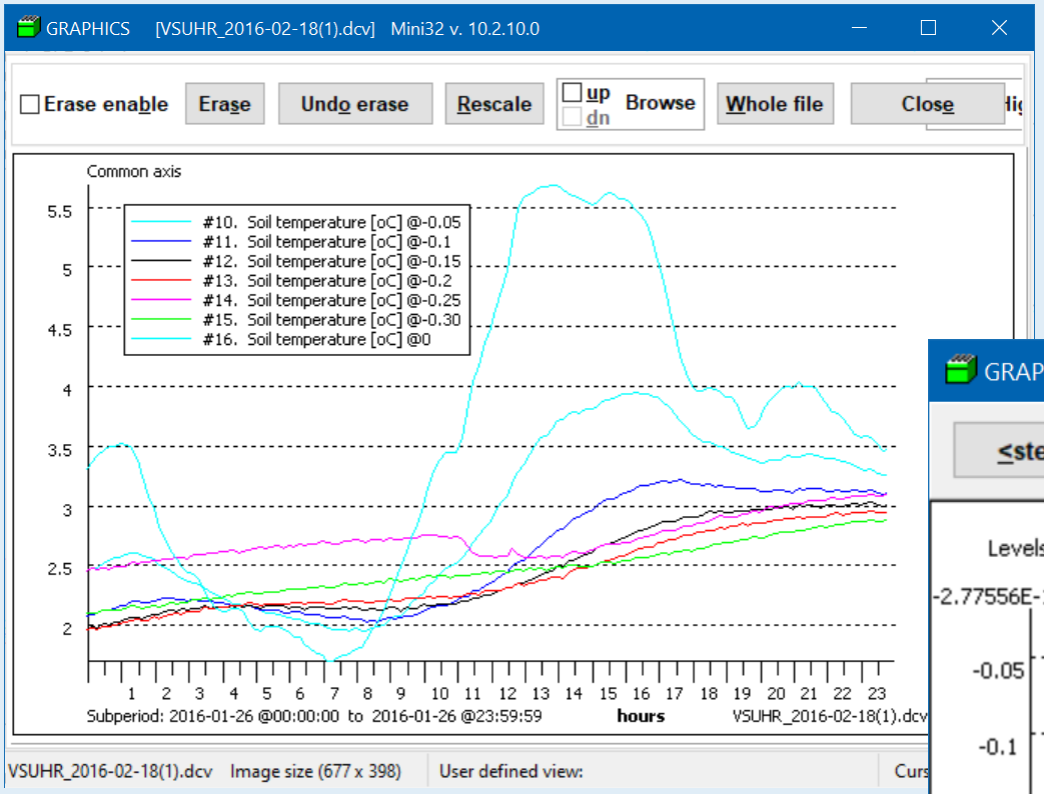
Items of pop-up menu

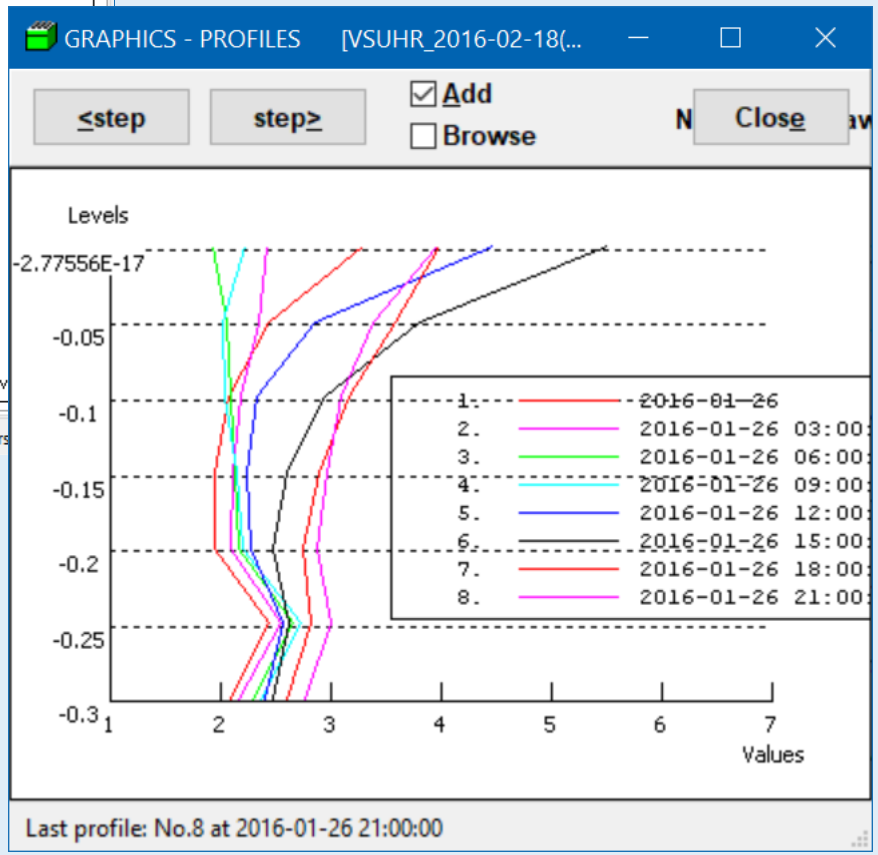
Curve fitting



Items of pop-up menu

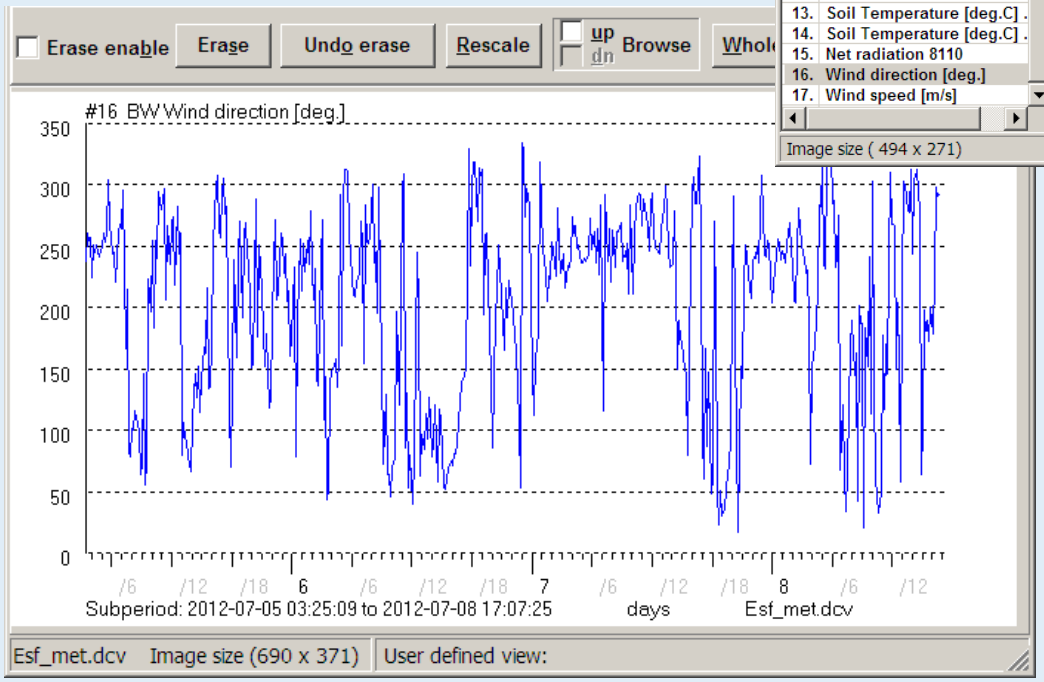
Vertical profiles

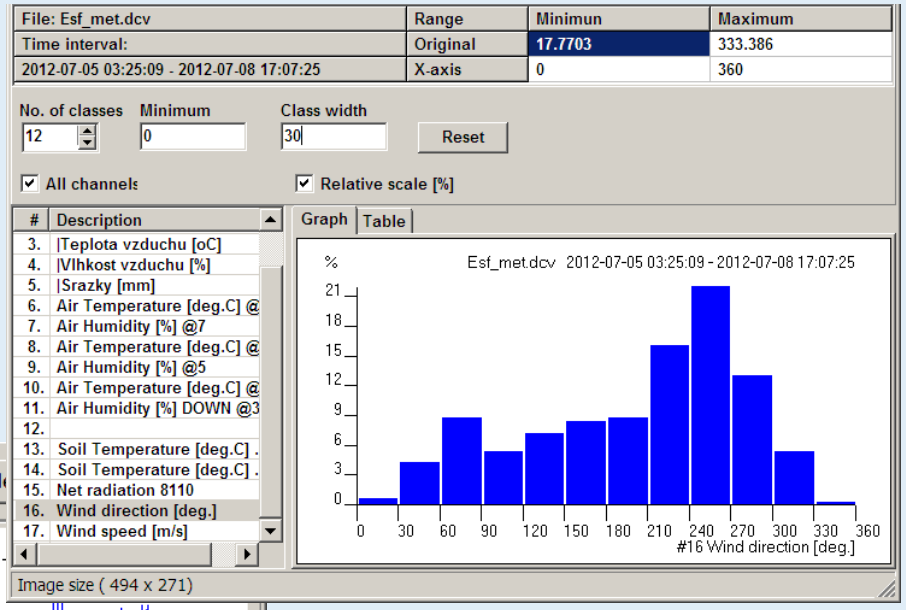




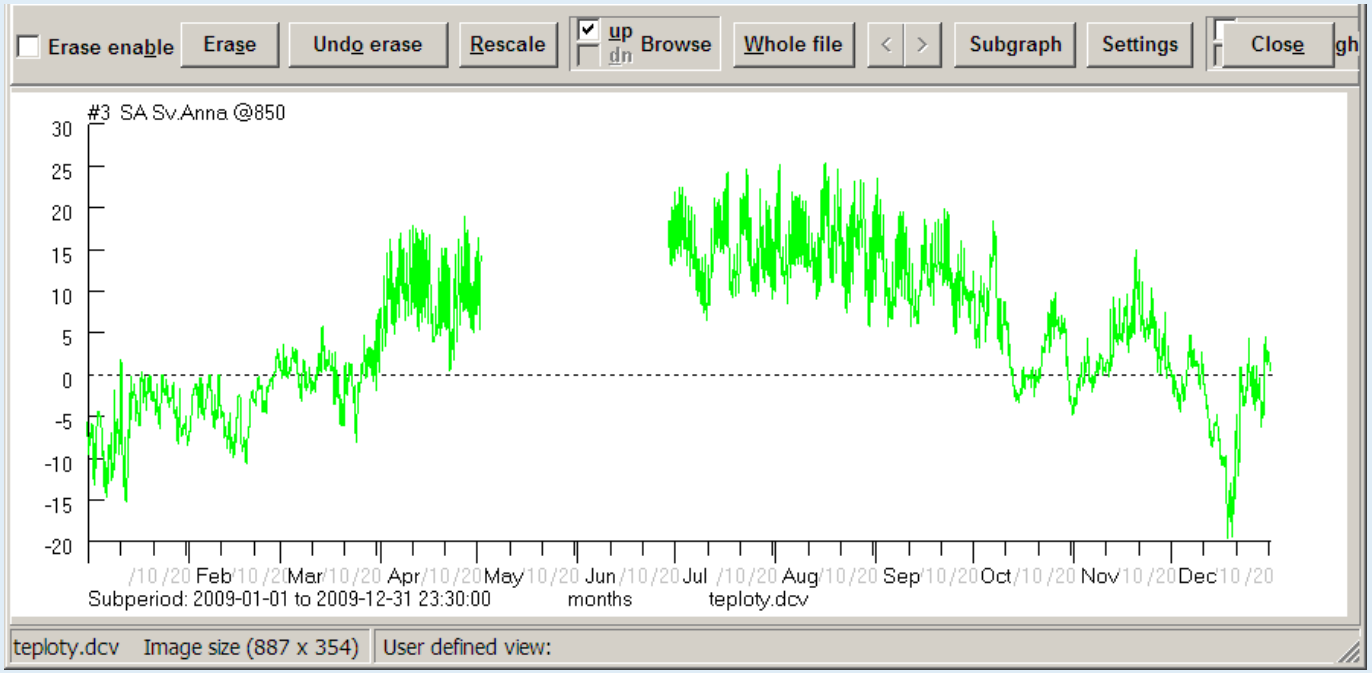
Items of pop-up menu

Histogram
(Frequency distribution)



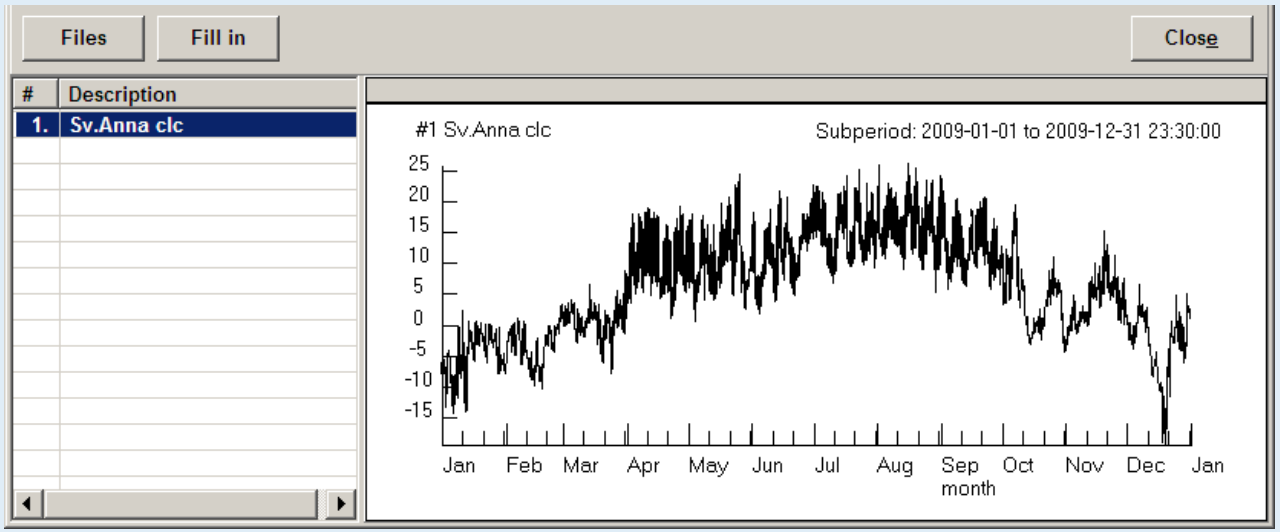


Items of pop-up menu

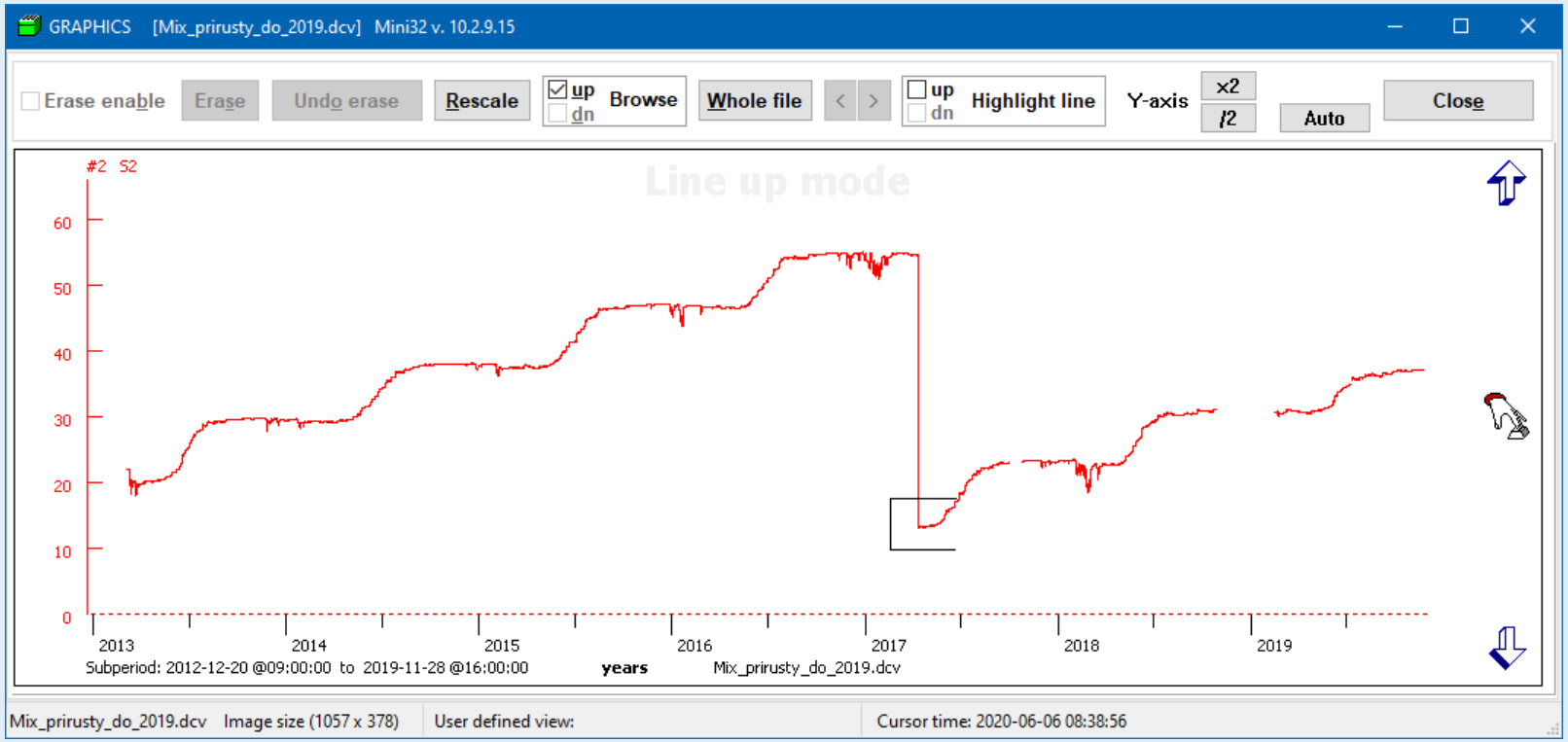


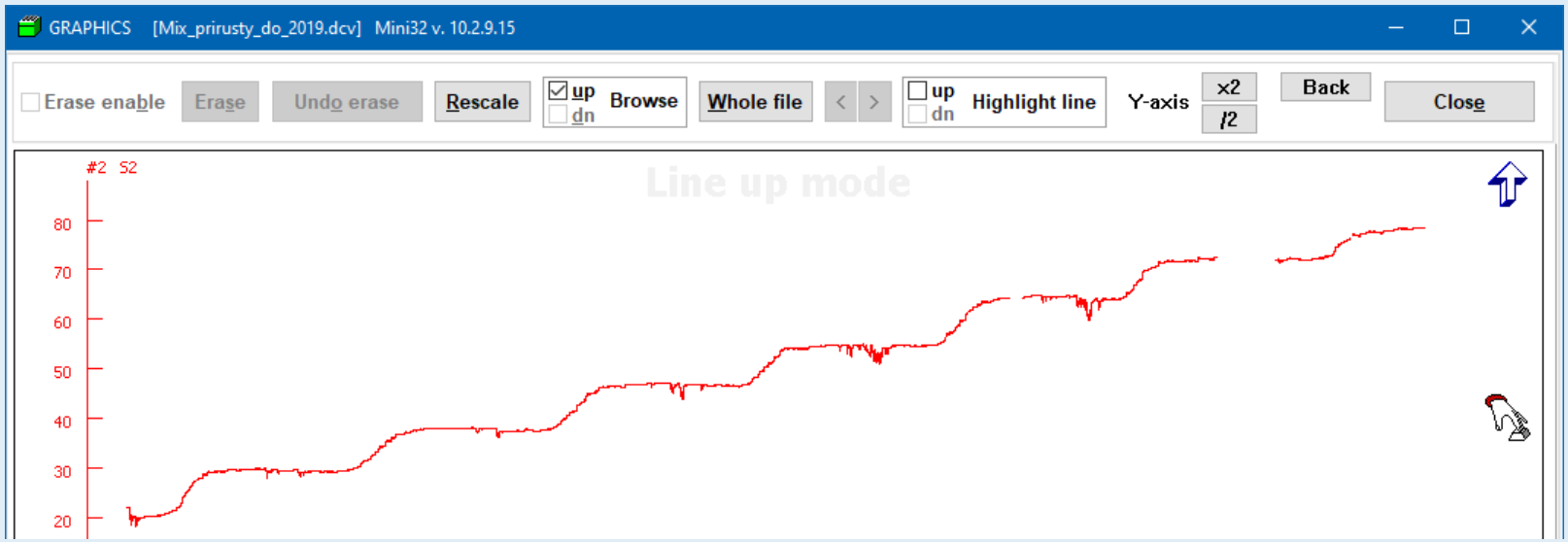
Fill-in

(completion missing data from another file)



Items of pop-up menu – line-up





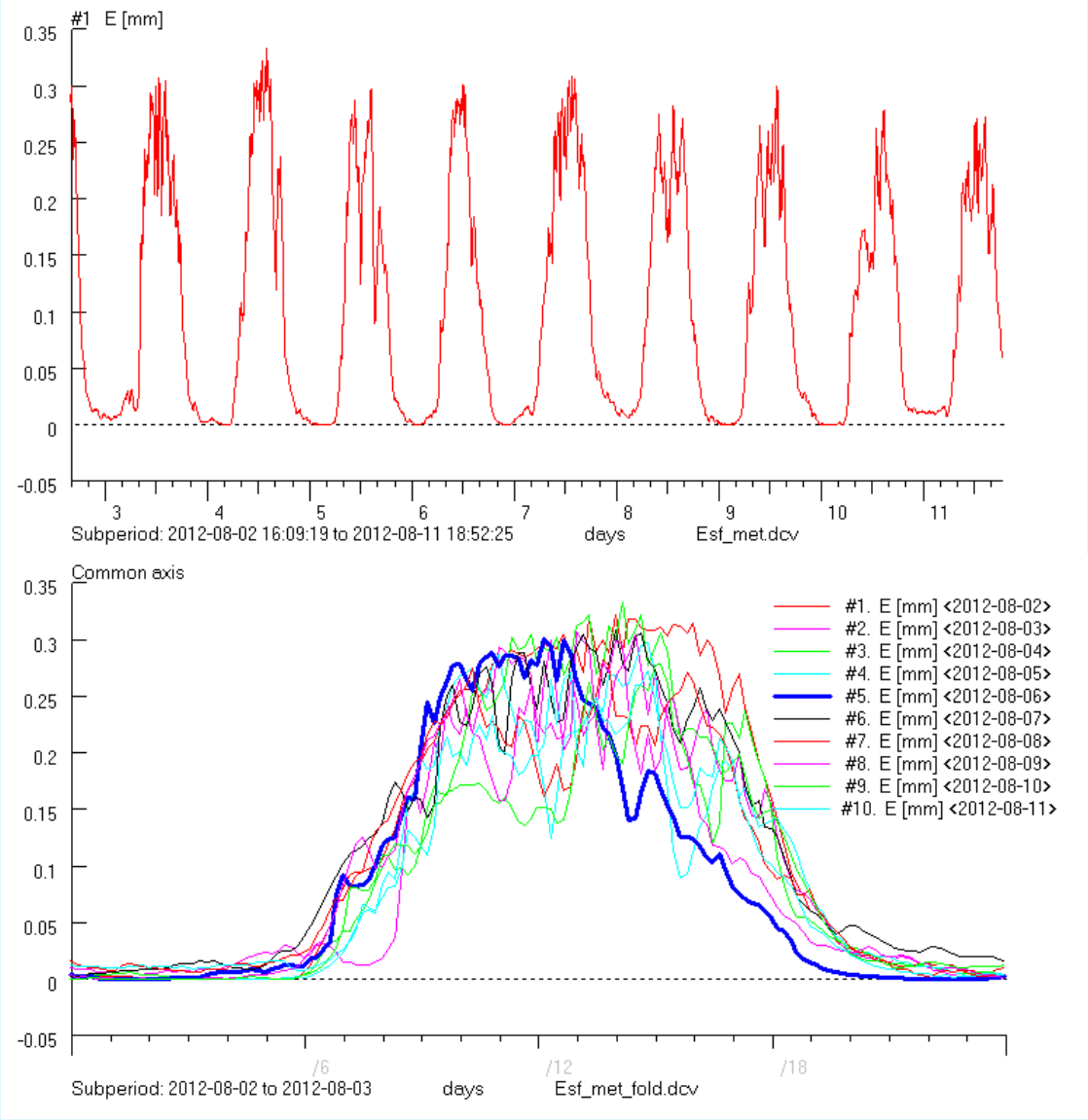
There are two operating modes – auto and manual.

Changing the scale helps at high amplitude.

Items of pop-up menu - export

Export from graphic screen

- Crop file (shorter file)
- Text file
- Excel file
- **Time folding**

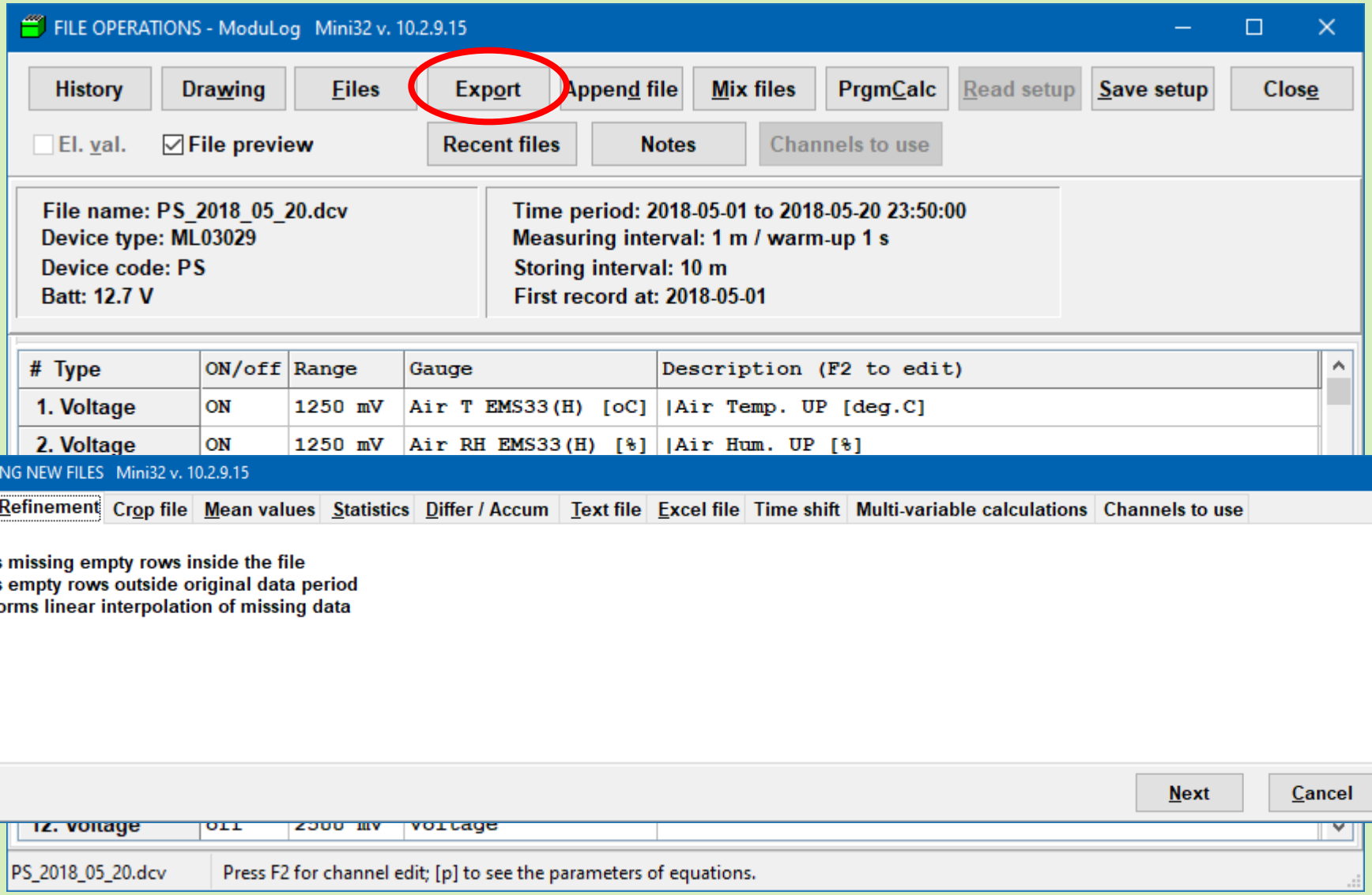


Creating new files

"Export" submenu – processing of the whole file.

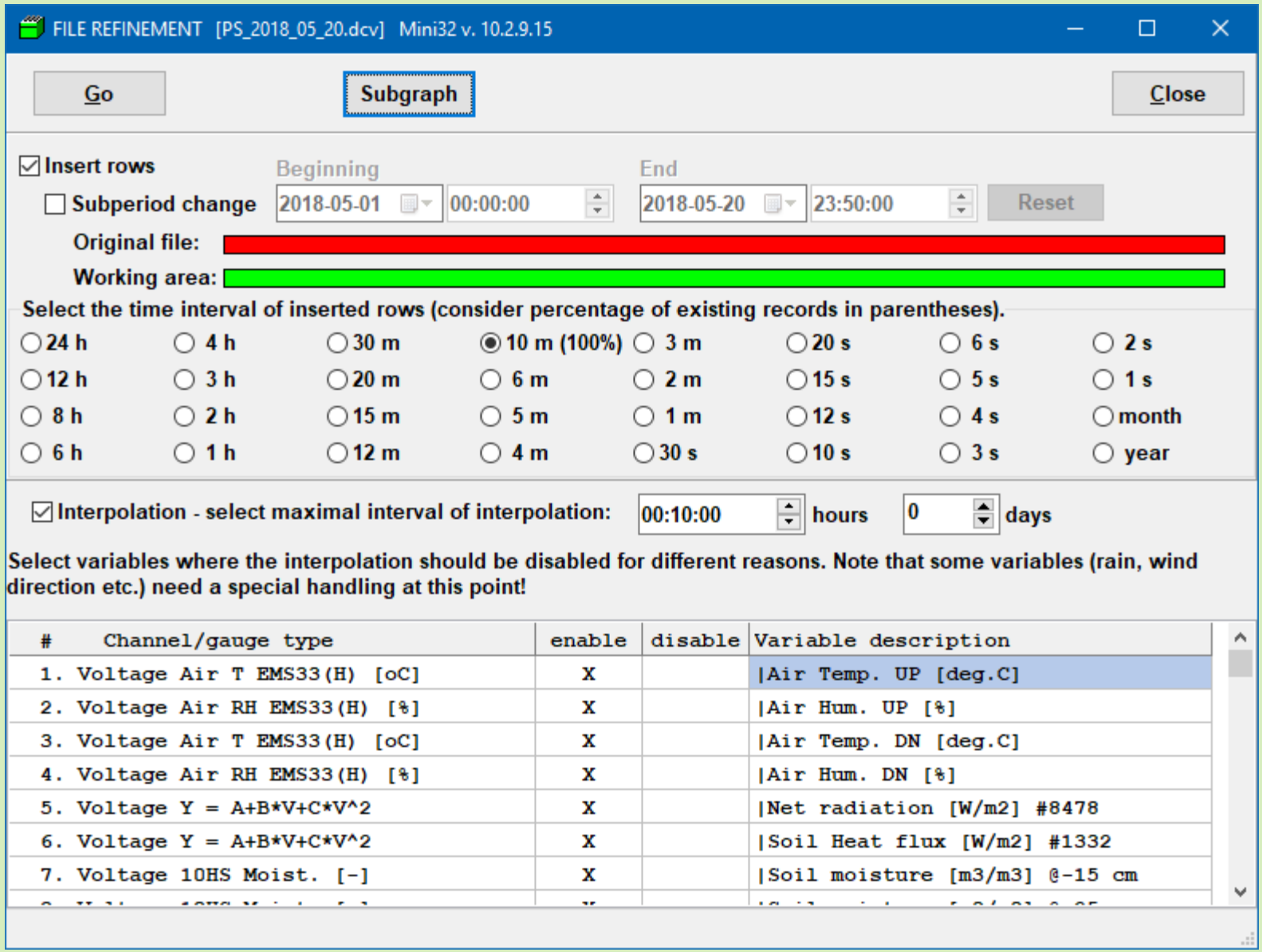
Creating new files

"Export" submenu



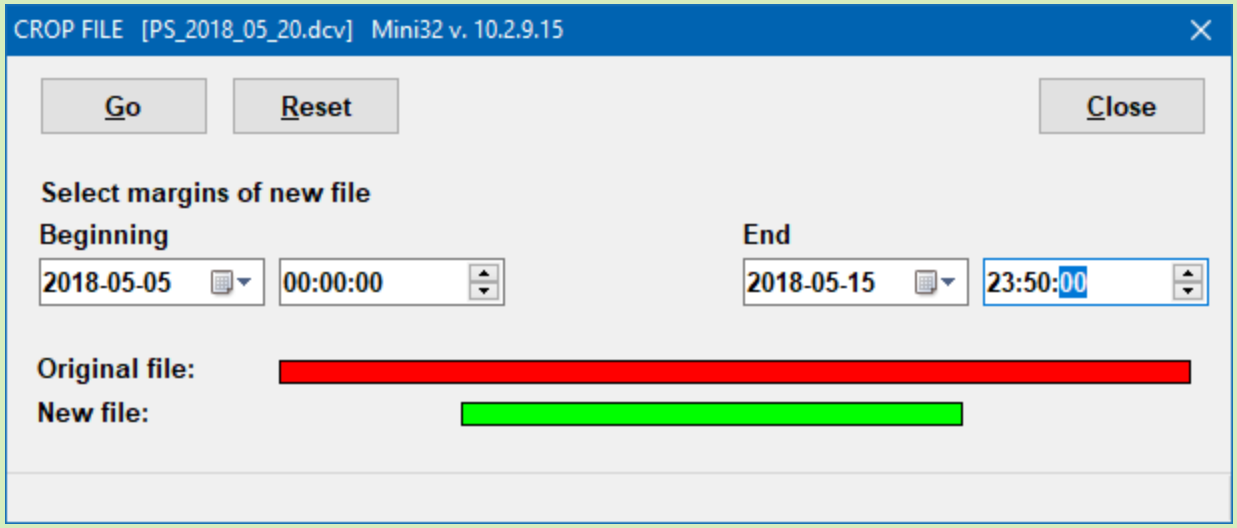
Creating new files

"Export" submenu – File refinement



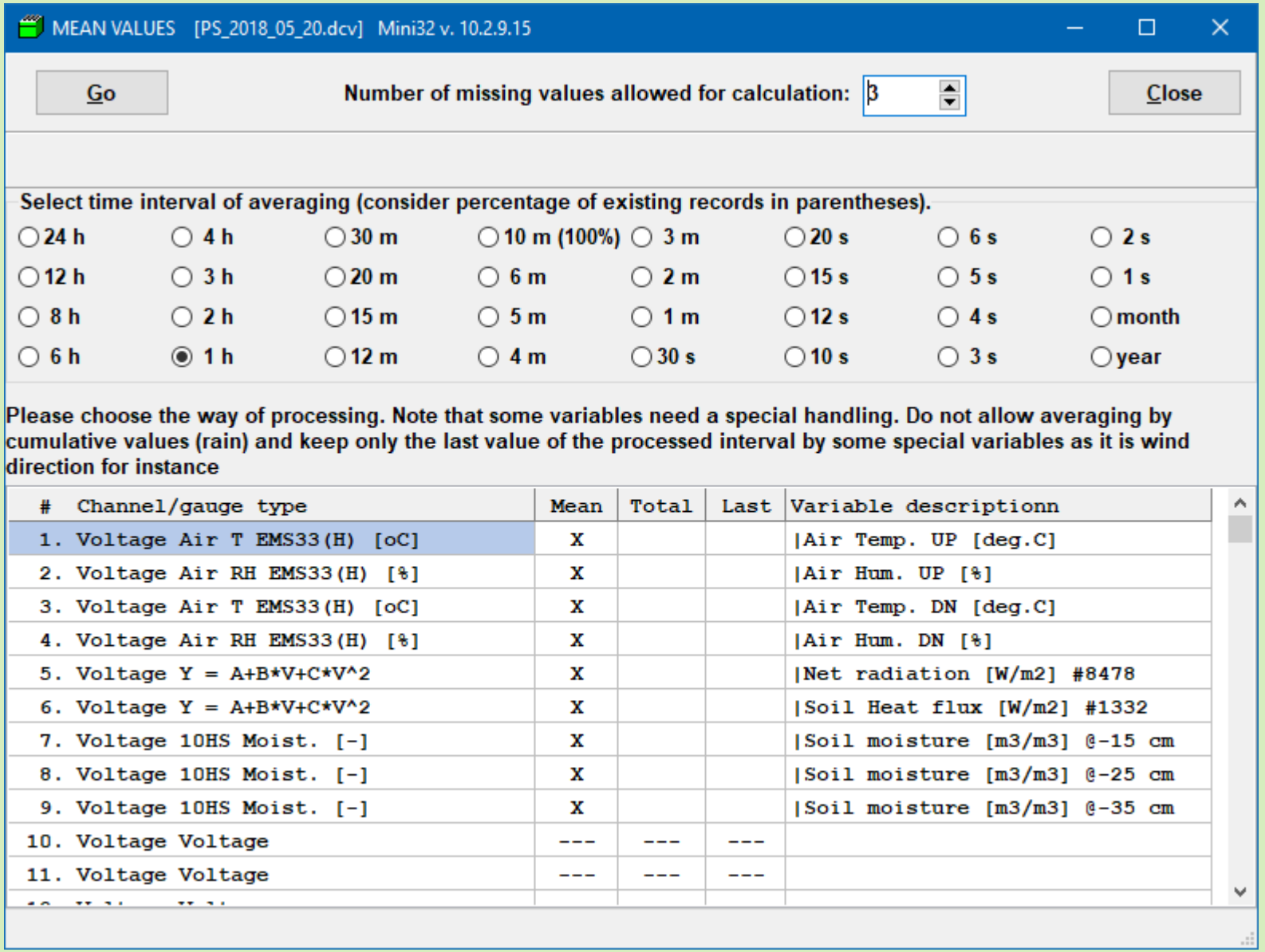
Creating new files

"Export" submenu – Crop file



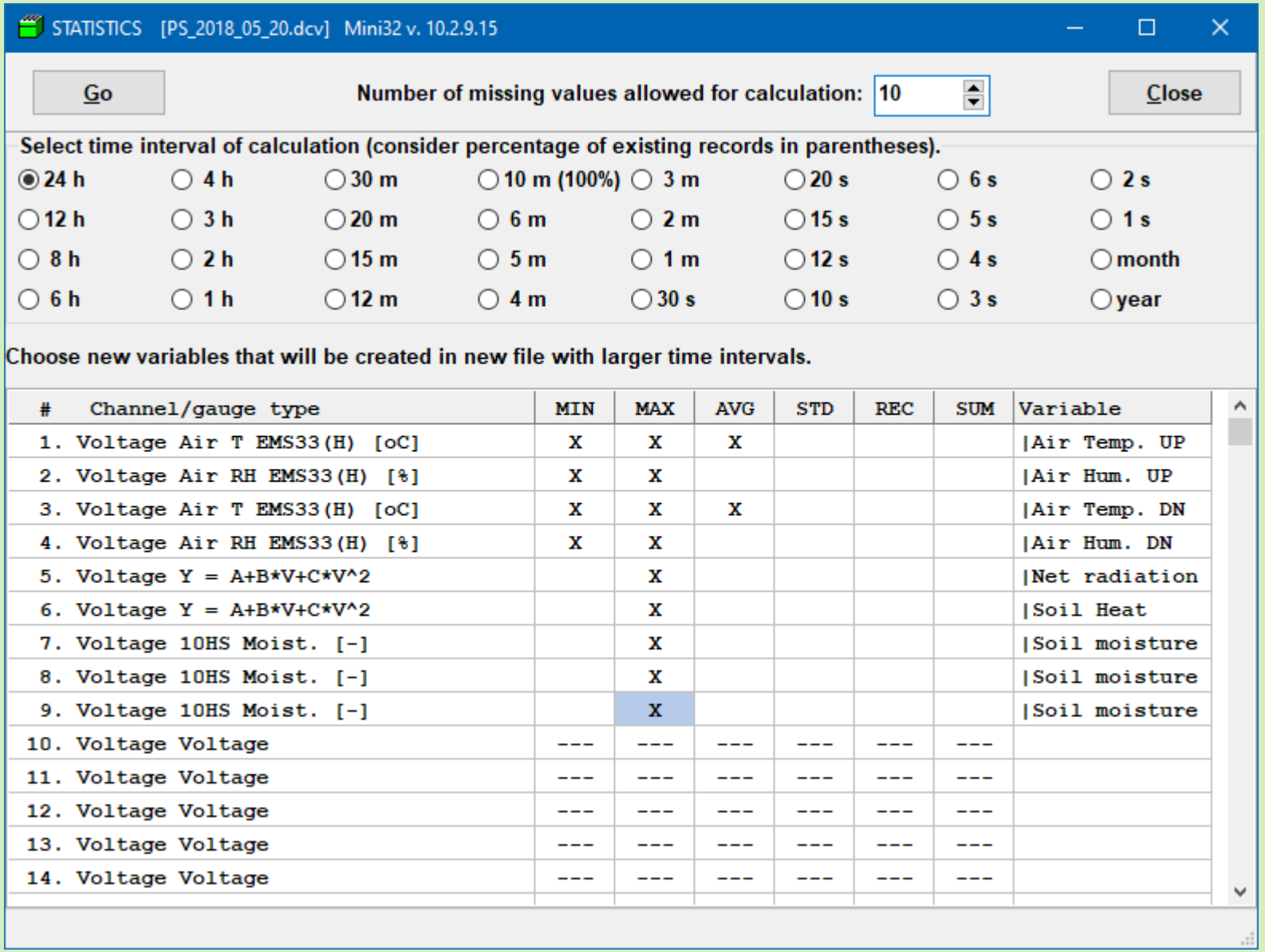
Creating new files

"Export" submenu – Mean values



Creating new files

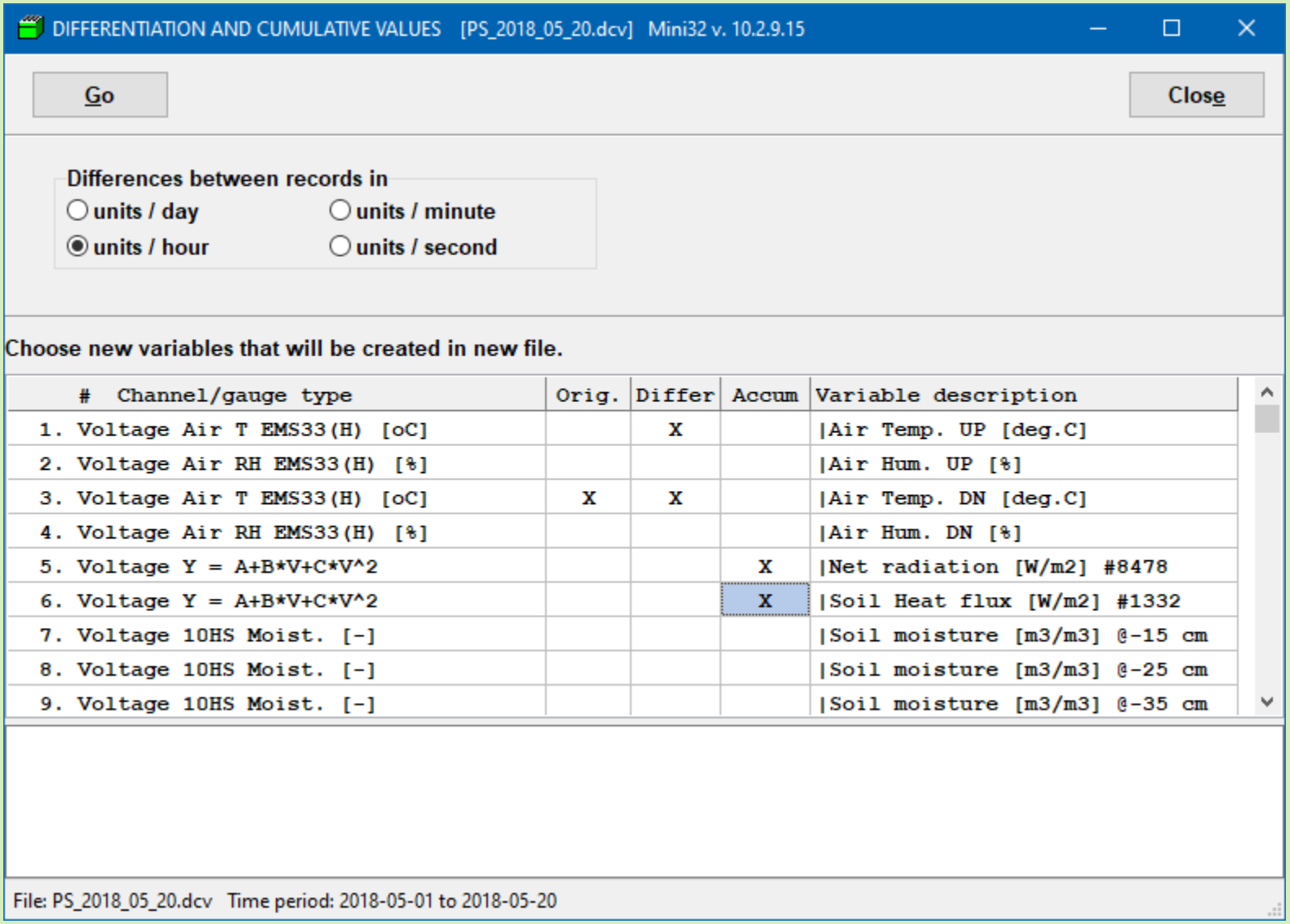
"Export" submenu – Statistics (statistical values within longer time intervals)



#	Channel/gauge type	MIN	MAX	AVG	STD	REC	SUM	Variable
1.	Voltage Air T EMS33(H) [oC]	X	X	X				|Air Temp. UP
2.	Voltage Air RH EMS33(H) [%]	X	X					|Air Hum. UP
3.	Voltage Air T EMS33(H) [oC]	X	X	X				|Air Temp. DN
4.	Voltage Air RH EMS33(H) [%]	X	X					|Air Hum. DN
5.	Voltage Y = A+B*V+C*V^2		X					|Net radiation
6.	Voltage Y = A+B*V+C*V^2		X					|Soil Heat
7.	Voltage 10HS Moist. [-]		X					|Soil moisture
8.	Voltage 10HS Moist. [-]		X					|Soil moisture
9.	Voltage 10HS Moist. [-]		X					|Soil moisture
10.	Voltage Voltage	---	---	---	---	---	---	
11.	Voltage Voltage	---	---	---	---	---	---	
12.	Voltage Voltage	---	---	---	---	---	---	
13.	Voltage Voltage	---	---	---	---	---	---	
14.	Voltage Voltage	---	---	---	---	---	---	

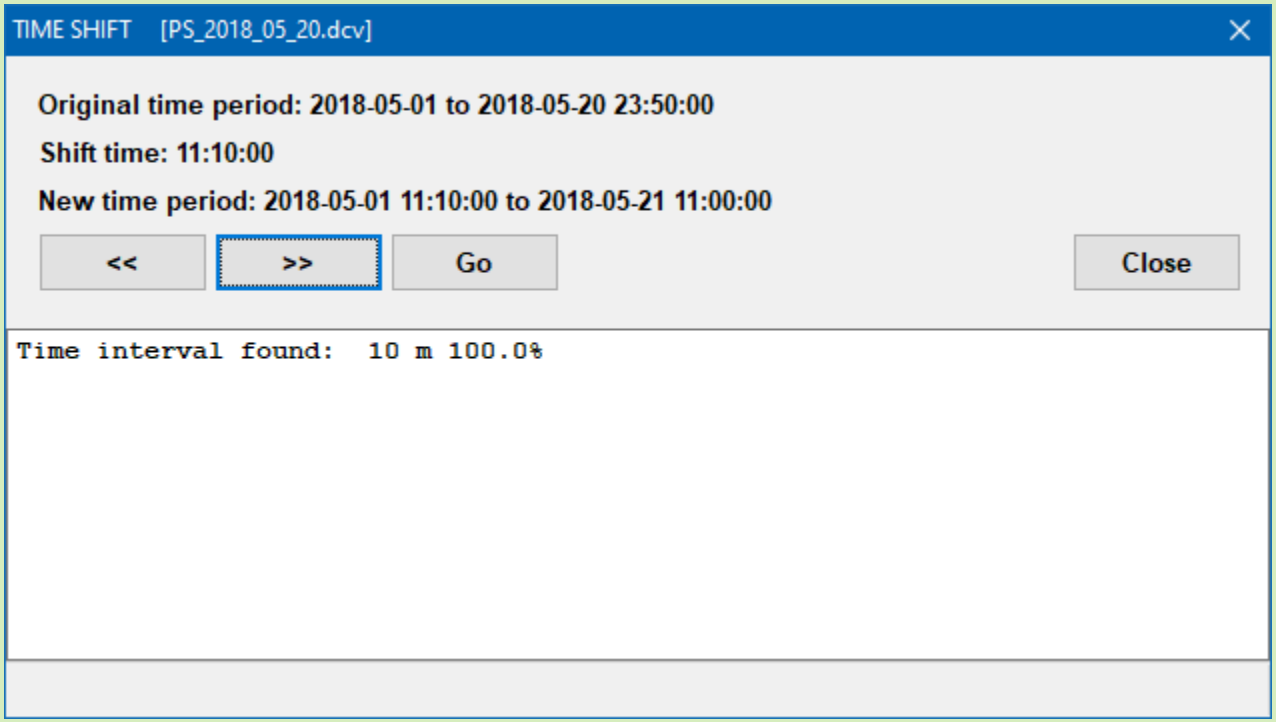
Creating new files

"Export" submenu – Differ/Accum – difference between following records and calculation accumulated values



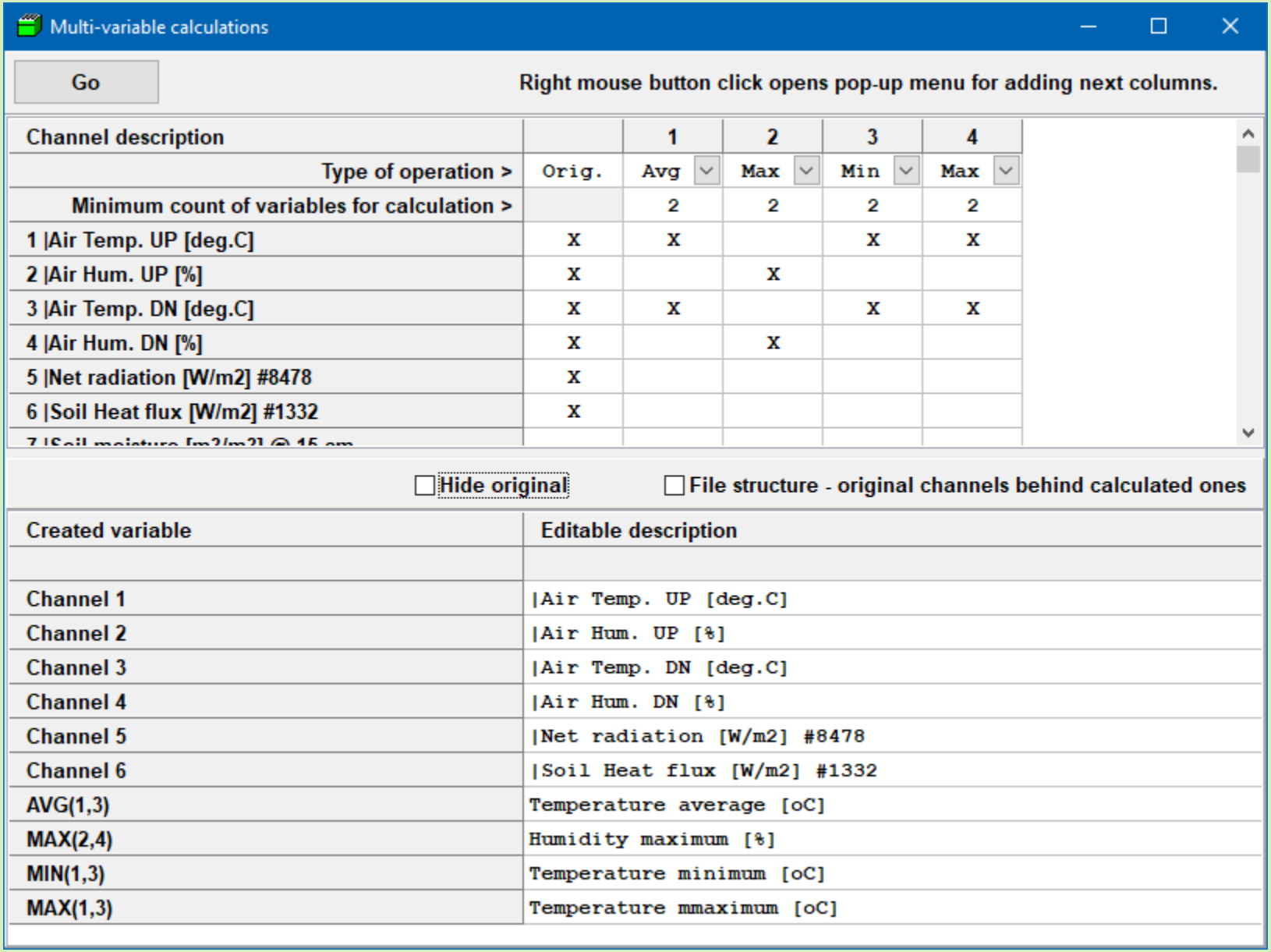
Creating new files

"Export" submenu – Time shift – correction of wrongly set data acquisition time (with resolution of time span between lines)



Creating new files

"Export" submenu – Multi-variable calculation



Creating new files

"Export" submenu – Channels to use – new file will contain only channels of one's interest

Channels to use

Go | Close

MV_2024_09_29_1 h.dcv — 4 channels selected

#	Channel	ON/of	Range	Gauge	Description	Sel
1	Temperature	ON	---	Temperature [oC]	Soil Temp. [°C] #1	
2	Temperature	ON	---	Temperature [oC]	Soil Temp. [°C] #2	
3	Events	ON	---	Weighted event	Precipitation [mm]	X
4	Voltage	ON	---	Supply voltage [V]	Supply Voltage [V]	
5	Temperature	ON	---	Temperature [oC]	Internal Temp. [°C]	
6	Humidity	ON	---	Humidity [%]	Internal Humidity [%]	
7	Internal	ON	---	Available energy [%]	Available Energy [%]	
8	SDI-12 1/1	ON	---	Glob. rad. [W/m2] EM	Global rad. [W/m2] 1/1	X
9	SDI-12 2/1	ON	---	Temperature [°C] EMS	Air Temperature [°C] 2/1	X
10	SDI-12 2/1	ON	---	Humidity [%] EMS33S	Air humidity [%] 2/1	X

FILE OPERATIONS - GreyBox Mini32 v. 10.2.17.0

History | Drawing | Files | Export | Append file | Mix files | PrgmCalc | Read setup | Save setup | Close

El. val. | File preview | Recent files | Notes | Channels to use

File Name: MV_2024_09_29_1 h_sel.dcv

Number of variables: 4

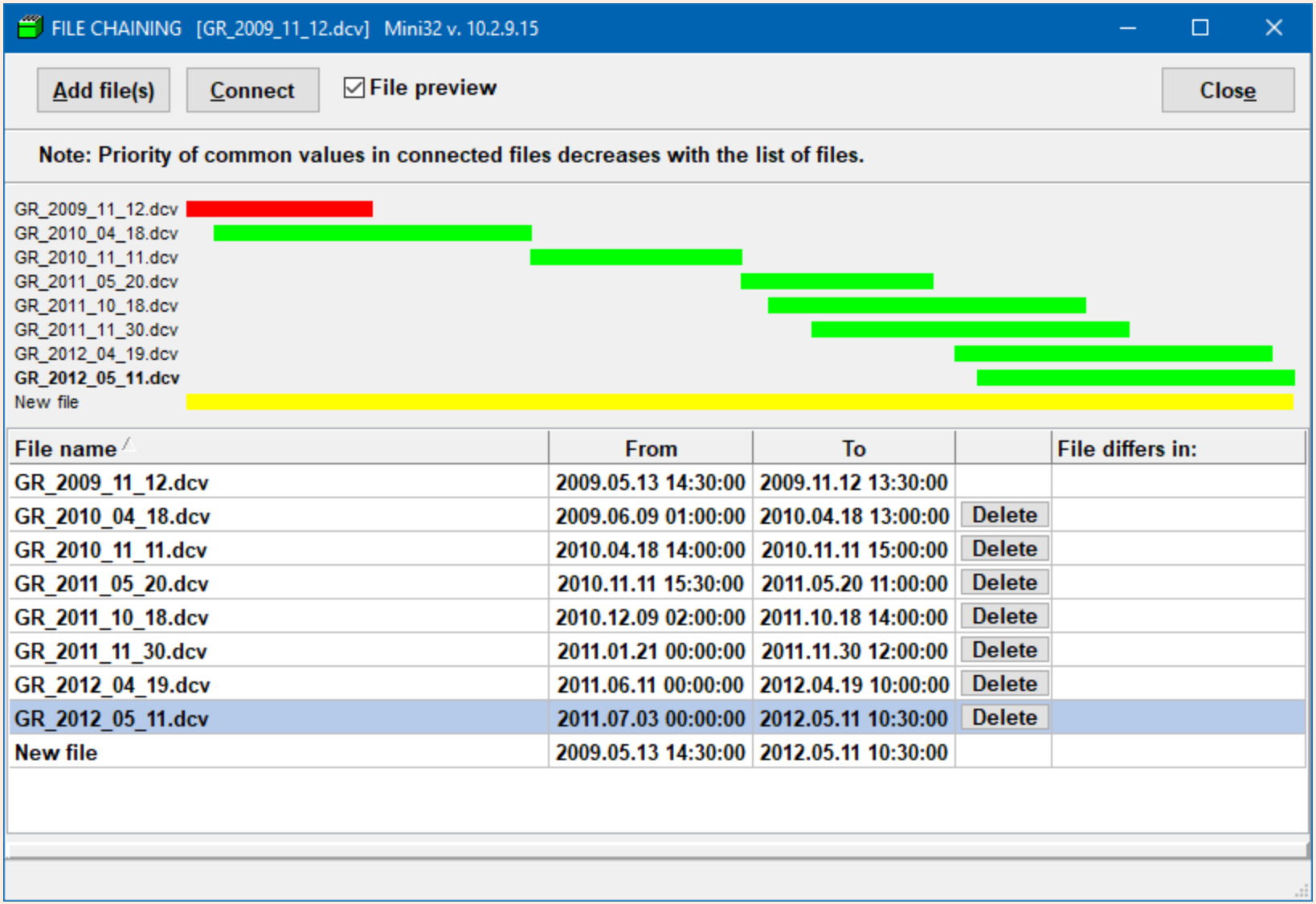
Time period: 2023-12-31 01:00:00 to 2024-09-29 14:00:00

MV_2024_09_29_1 h.dcv

#	Type	d. c.	Range	Gauge	Description (F2 to edit)
1.	Events	MV	---	Weighted event	Precipitation [mm]
2.	SDI-12 1/1	MV	---	Glob. rad. [W/m2] EM	Global rad. [W/m2] 1/1
3.	SDI-12 2/1	MV	---	Temperature [°C] EMS	Air Temperature [°C] 2/1
4.	SDI-12 2/1	MV	---	Humidity [%] EMS33S	Air humidity [%] 2/1

Creating new files

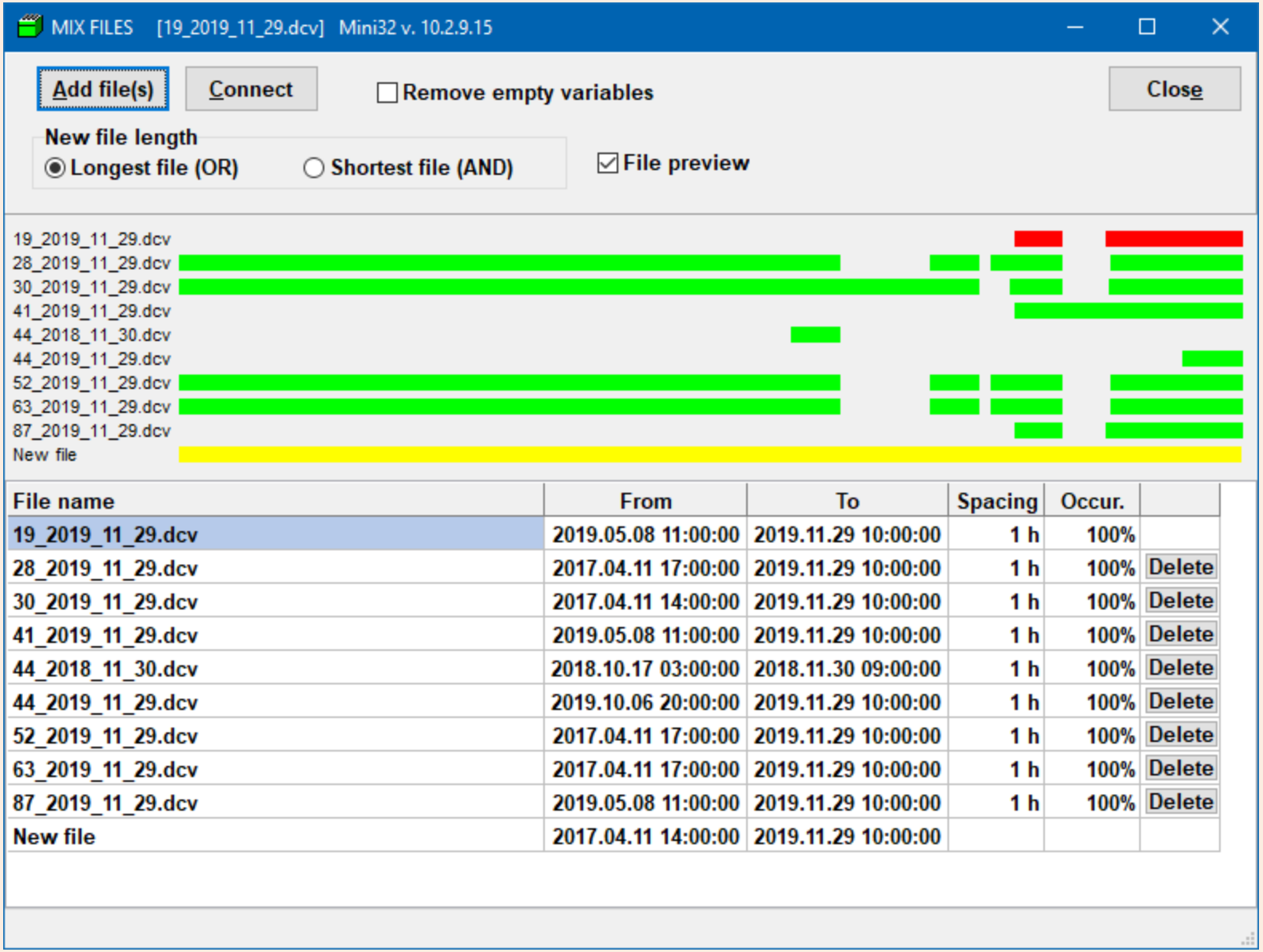
Directly from file info screen – file chaining (append files of the same structure to opened file)



File name	From	To		File differs in:
GR_2009_11_12.dcv	2009.05.13 14:30:00	2009.11.12 13:30:00		
GR_2010_04_18.dcv	2009.06.09 01:00:00	2010.04.18 13:00:00	Delete	
GR_2010_11_11.dcv	2010.04.18 14:00:00	2010.11.11 15:00:00	Delete	
GR_2011_05_20.dcv	2010.11.11 15:30:00	2011.05.20 11:00:00	Delete	
GR_2011_10_18.dcv	2010.12.09 02:00:00	2011.10.18 14:00:00	Delete	
GR_2011_11_30.dcv	2011.01.21 00:00:00	2011.11.30 12:00:00	Delete	
GR_2012_04_19.dcv	2011.06.11 00:00:00	2012.04.19 10:00:00	Delete	
GR_2012_05_11.dcv	2011.07.03 00:00:00	2012.05.11 10:30:00	Delete	
New file	2009.05.13 14:30:00	2012.05.11 10:30:00		

Creating new files

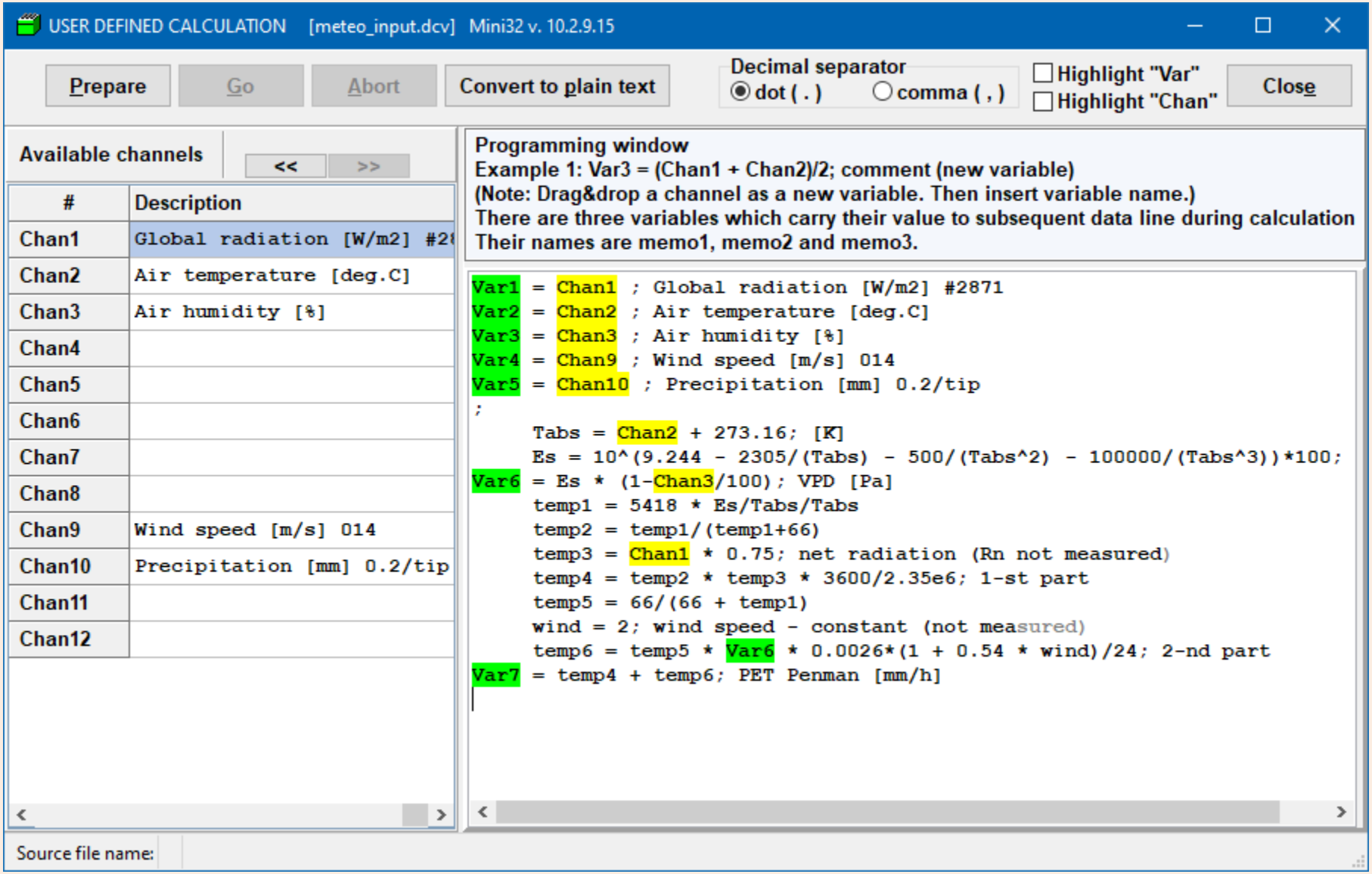
Directly from file info screen – mixing files from similar time period with different variables



File name	From	To	Spacing	Occur.	
19_2019_11_29.dcv	2019.05.08 11:00:00	2019.11.29 10:00:00	1 h	100%	
28_2019_11_29.dcv	2017.04.11 17:00:00	2019.11.29 10:00:00	1 h	100%	Delete
30_2019_11_29.dcv	2017.04.11 14:00:00	2019.11.29 10:00:00	1 h	100%	Delete
41_2019_11_29.dcv	2019.05.08 11:00:00	2019.11.29 10:00:00	1 h	100%	Delete
44_2018_11_30.dcv	2018.10.17 03:00:00	2018.11.30 09:00:00	1 h	100%	Delete
44_2019_11_29.dcv	2019.10.06 20:00:00	2019.11.29 10:00:00	1 h	100%	Delete
52_2019_11_29.dcv	2017.04.11 17:00:00	2019.11.29 10:00:00	1 h	100%	Delete
63_2019_11_29.dcv	2017.04.11 17:00:00	2019.11.29 10:00:00	1 h	100%	Delete
87_2019_11_29.dcv	2019.05.08 11:00:00	2019.11.29 10:00:00	1 h	100%	Delete
New file	2017.04.11 14:00:00	2019.11.29 10:00:00			

Creating new files

Directly from file info screen – User defined calculation



The End