Output

VieVS creates a number of information/data such as session information, estimated parameters and statistics which are described in this section.

Command window

In a single-session analysis several informations are provided in the Matlab command window. Those include:

- Name of the session
- Information about excluded sources, baselines or stations
- Participating stations
- A priori models used for the theoretical delay
- Reference clock station
- Statistics
  - Number of scans, antennas, sources and observations (also per station)
  - A priori and a posteriori stdandard deviation of unit weight
  - χ^2 of the first and main solution $\left(\frac{v^TPv}{n-u+n_C}\right)$, also per antenna and baseline ($v_{\cdots}$residuals, $P_{\cdots}$weight matrix, $n_{\cdots}$number of observations, $u_{\cdots}$number of unknown parameters, $n_{C\cdots}$number of constraint equations)
  - Number of automatically detected outliers
  - Number of estimated parameters
- Path of saved output files
- Program error/crash information

Residuals plot

After a processing run, a plot appears showing the residuals of the last session (if only one session was processed, the residuals of this session are shown). The residuals can also be (at a later stage) visualized in *Plotting - Residuals*.

Parameter logfile

VieVS writes automatically all selected parameters to a textfile, which is overwritten in every new run. The output file is */VieVS/WORK/input_protocol.txt*. If you want to write that file to a different directory, click on the button *Save as...* in *Run - VieVS estimation settings*.

Saved files

- Estimated parameters are saved in VieVS/DATA/LEVEL3*/subfolder*/x_ *sessionname.mat*.
- Estimation options
- Normal equation matrix

- Right hand side vector

Optional output

In VieVS there are possibilities to save processed data in a certain format (SINEX) or calculate additional parameters for processed data.

SINEX

SINEX is a standard output format for geodetic parameters. If you want to write these textfiles, go to *Run - Sinex output* and tick the checkbox *write SINEX file*. The user can select the parameters to be included in the SINEX file by switching the radio buttons. Note, that the SINEX file could become very large when all parameters are written to the SINEX file.
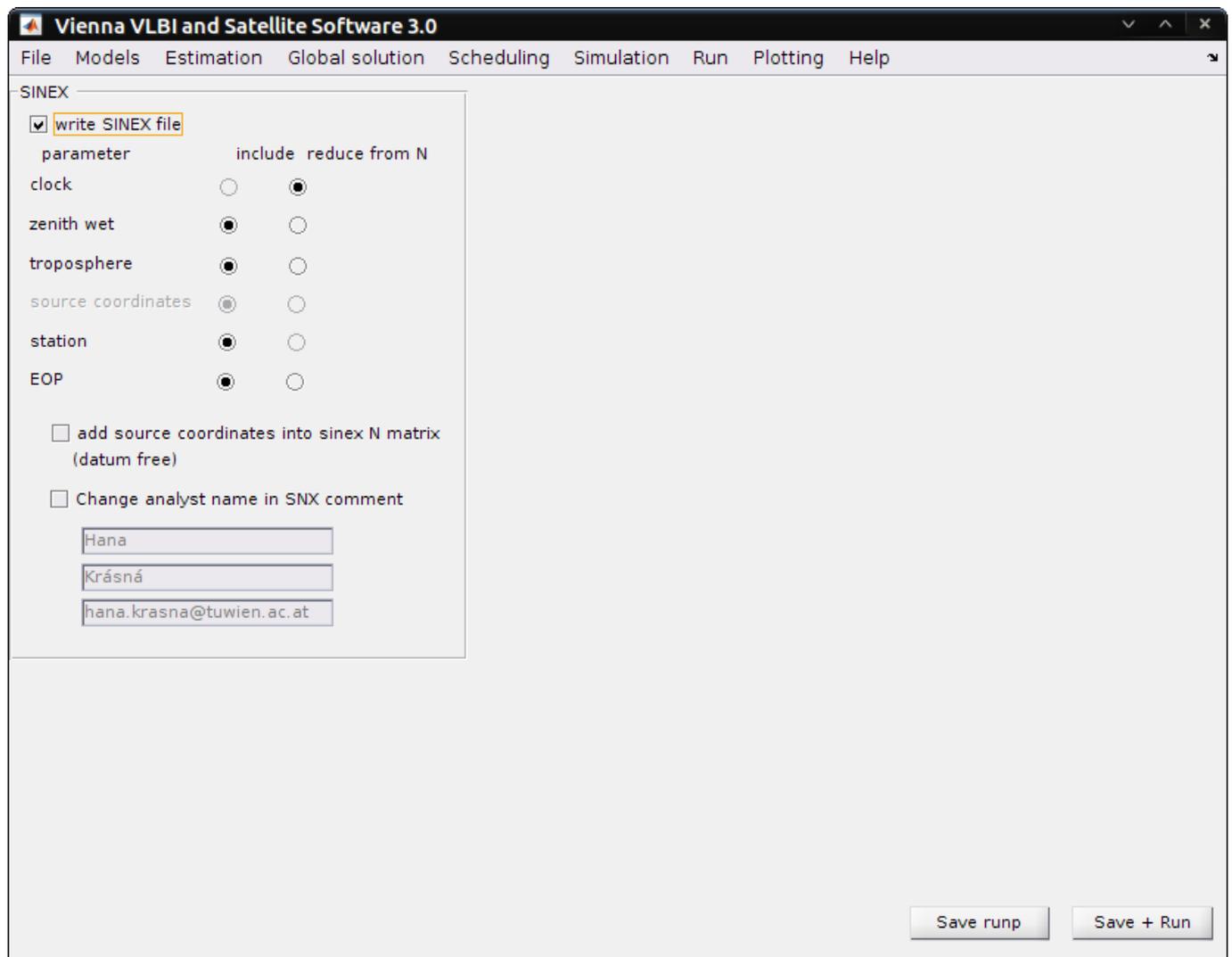
Earth Orientation Parameters (EOP) output

In *Plotting - EOP/BAS out* for the chosen processed data EOP time series can be can be written in the file in three formats:

- Detailed EOP data;
- Ordered EOP data;
- VieVS-formatted EOP data.
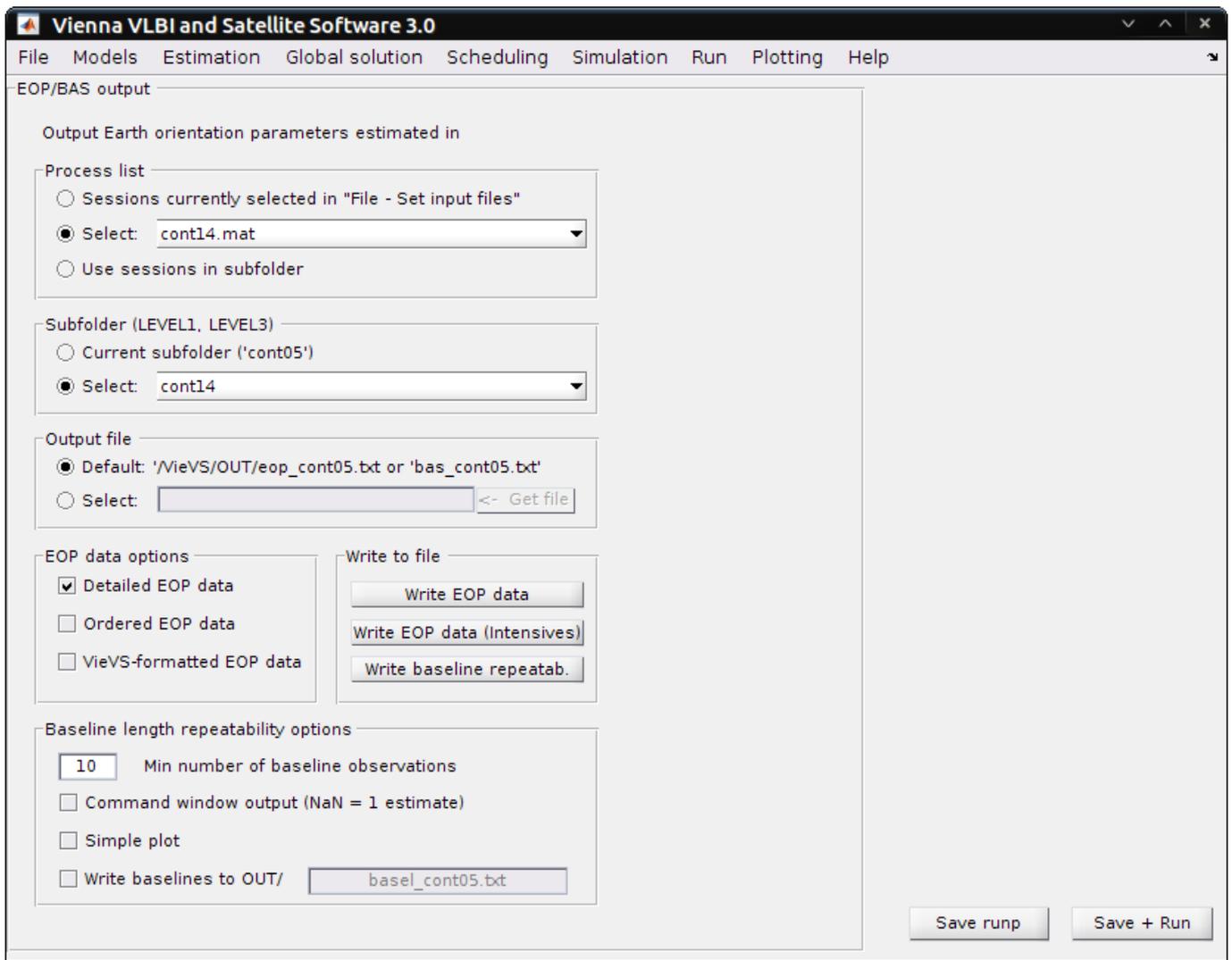
Select:

1. The process list. It can be selected chosen sessions *File - Set input files* or all session in the chosen subfolder in the box below;
2. Subfolder where the processed data is stored. It can the current subfolder in *Run - Run options* or subfolder from the list;
3. Output file. This file will be called in accordance with the name of the chosen subfolder if you did not specify other in the popup window appeared when *Get file* is clicked.

Writing the data to file:

1. Chose the desired format in the *EOP data options*;
2. Click *Write EOP data* if in subfolder the processed data are regular sessions;
3. Click *Write EOP data (Intensives)* if in subfolder the processed data are intensive sessions;

File with detailed info by columns:

```
1     .... MJD (modified Julian date in days)
2-6   .... total EOP values(xpol,ypol,dut1,dX,dY)
```

```
7-11  .... a priori EOP (input in VIE_MOD: x_apr, y_apr, ut_apr, dX_apr,
dY_apr)
11-16 .... estimated values (x_est, y_est, dut1_est, dX_est, dY_est)
17-21 .... error of estimation (x_err, y_err, ut_err, dX_err, dY_err)
22-24 .... the high-frequency (subdaily) ERP corrections (x_hf, y_hf, ut_hf)
```

where all units in mas resp. ms (dut1) and the total EOP values are the a priori EOP plus estimated values.

- Only first 6 columns are written in the other two formats.
- In ordered EOP file the data are sorted by date, multiple entries are weighted.
- In the VieVS-formatted file the data are the same as in the ordered EOP file plus the beginning and ending of time series are expanded for certain number of days using EOP finals (5 days for the interpolation needs in VIE_MOD).

Baseline lenghts

In order to write a text file containing all baselines between the participating stations and their baseline repeatability, go to *Plotting - EOP/BAS out*.

1. Select process list, subfolder and output file in the corresponded panels as for EOP output.
2. Click the button ''Write baseline repeatab.'.

In your command window:

```
Baseline length repeatability written to: ../OUT/basRep_subfolder.txt
```

which contains:

```
 1 (cols 01-17)  baseline name
 2 (cols 19-28)  mean epoch (modified Julian date in days)
 3 (cols 30-42)  mean baseline length in meters
 4 (cols 44-49)  baseline length repeatability in cm
 5 (cols 51-56)  weighted baseline length repeatability in cm
```

In the panel *Baseline length repeatability options* you can make:

1. An output to the command window for all baseline generated in the processed data;
2. A simple popup plot;
3. An additional file *../OUT/basel_subfolder.txt* where column are

```
1     .... session
2     .... reference time, modified Julian date in days
3     .... baselines names
4     .... a priori baseline lengths in meters
5     .... estimated baseline lengths in meters
6     .... formal errors in meters
```

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