

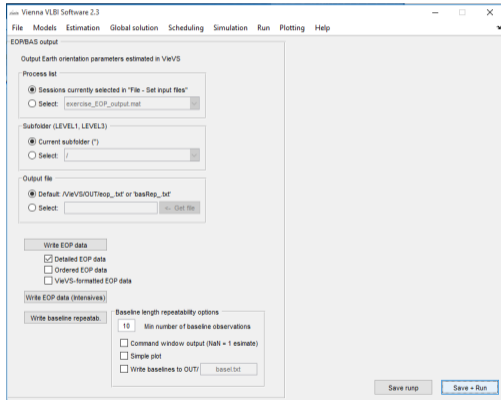
Vie_Setup: EOP and baseline length repeatability output

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Plotting: EOP/BAS out

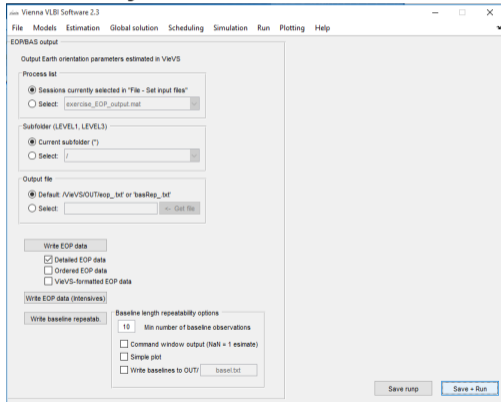
- Process_list
Select sessions
- Subfolder
Select prepared data
LEVEL3/subfolder/
x_session_name, opt_session_name
LEVEL1/subfolder/
session_name_parameter
- Output file
- Write EOP data
- Write baseline repeatability



Plotting: EOP/BAS out

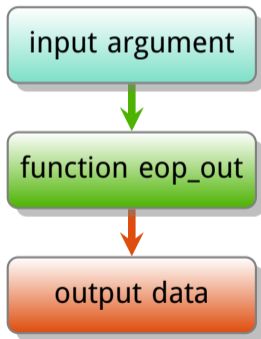
- Process_list
Select sessions
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Select prepared data
LEVEL3/subfolder/
x_session_name, opt_session_name
LEVEL1/subfolder/
session_name_parameter
- Output file
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One way: via GUI interface

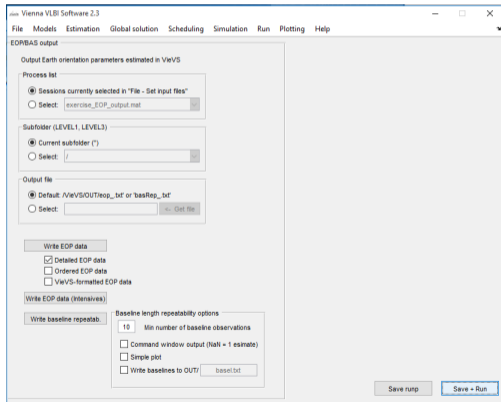


Write EOP data

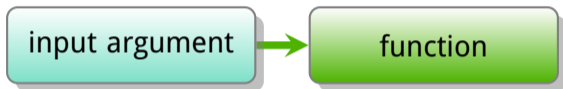
Other way



One way: via GUI interface



Arguments of /OUT/eop_out.m

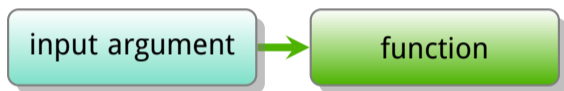


`x_.xpol.mjd` & `x_.xpol.val` & `x_.xpol.mx`

`opt_.xpol.model`

`_parameter`: parameter.eop & reductions flags as applied in
`vie_mod`

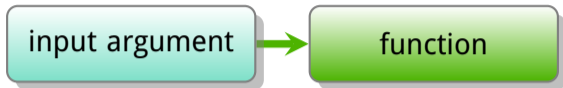
Arguments of /OUT/eop_out.m



Welcome to MATLAB terminal!

>>

Arguments of /OUT/eop_out.m



go to /OUT/

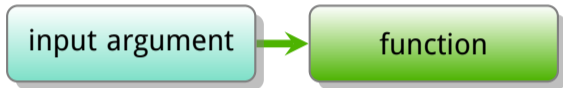
```
>> load('../WORK/PROCESSLIST/exercise_sesslist.mat');
```

! name of appeared variable in Workspace must be the first argument for eop_out.m (in the example: **process_list**) *!*

```
>> subdir = 'exercise_EOP_output';
```

! name of non-empty directory /DATA/LEVEL3/**subdir**/ is output directory for regular process of single session *!*

Arguments of /OUT/eop_out.m



- >> `file_name = 'filename.txt';`
- >> `output_mode = [1,0,0];` (optional argument, default settings)

- >> `function eop_out(process_list, subdir, file_name, output_mode);`

function eop_out(process_list, subdir, file_name, [1,0,0])



Detailed EOP file (by default) is saved in
/OUT/filename_detailed.txt;

```
1  %*****
2  % Columns:
3  %      1      .... mjd
4  %      2-6    .... total values(x,y,ut,dX,dY)
5  %      7-11   .... a priori EOP (input in vie_mod)
6  %      11-16  .... estimated values
7  %      17-21  .... error of estimation
8  %      22-24  .... high frequency (subdaily) ERP corrections
9  %
10 % all units in mas resp. ms (dut1)
11 %*****
```

function eop_out(process_list, subdir, file_name, [0,1,0])



Sorted EOP file (sorted by date, multiple entries are incorporated) is saved in

/OUT/filename_ordered;

```
1 %*****
2 % Columns:
3 %      1      .... mjd
4 %      2-6    .... total values(x,y,ut,dX,dY)
5 % all units in mas resp. ms (dut1)
6 %*****
7 % MJD  xpol  ypol  dut1  dX  dY
```

function eop_out(process_list, subdir, file_name, [0,0,1])



VieVS specific format (beginning and ending of time series are expanded for certain number of days using EOP finals) is saved in

/OUT/filename_views-format;

```
1 %*****
2 % Columns:
3 %      1      .... mjd
4 %      2-6    .... total values(x,y,ut,dX,dY)
5 % all units in mas resp. ms (dut1)
6 %*****
7 % MJD  xpol  ypol  dut1  dX  dY
```

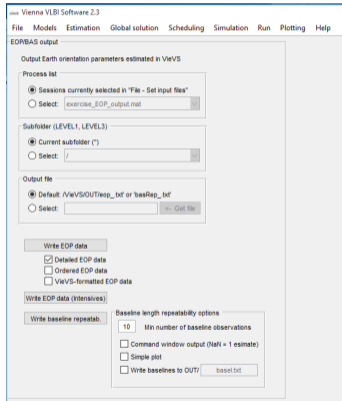
Write EOP data: Intensives

- Write EOP data (intensives)

Function available in /OUT/
eop_out_int(process_list, subdir, file_name)

* mjd is the middle of a session

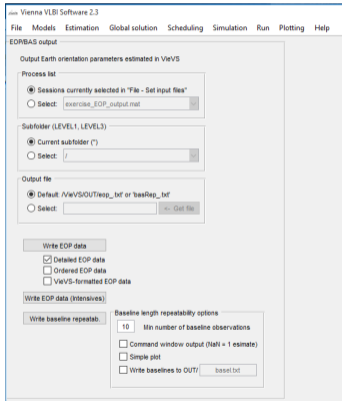
```
1 %*****
2 % Columns:
3 %      1      .... mjd
4 %      2-6    .... total values(x,y,ut,dX,dY)
5 %      7-11   .... a priori EOP (input in vie_mod)
6 %      11-16  .... estimated values
7 %      17-21  .... error of estimation
8 %      22-24  .... high frequency (subdaily) ERP corrections
9 %
10 % all units in mas resp. ms (dut1)
11 %*****
```



Write base length repeatability

- Write baselinerepeatab.
/OUT/repeatab.m generates

```
1 # Baseline length repeatability from Vienna VLBI Software
2 # Mean values over all break-time-spans
3 # Linear fit removed before calculation of standard deviation
4 #
5 # Breaks (Earthquakes) are taken from the viewsTrf
6 #
7 # Created on dd.mm.yyyy hh:mm:ss
8 # by function repeatab.m
9 #
10 # Min number of observations of baseline (in every break-time-span): 10
11 # Number of baselines: N
12 #
13 # col1 (cols 01-17) baseline name
14 # col2 (cols 19-28) mean epoch (mjd)
15 # col3 (cols 30-42) mean baseline length in meters
16 # col4 (cols 44-49) baseline length repeatability in cm
17 # col4 (cols 51-56) weighted baseline length repeatability in cm
18 #
19
```



Write base length repeatability

- Write baselinerepeatab.
/OUT/bas_out.m writes baselines to OUT

```
1 %*****
2 % Columns:
3 %      1      ... session
4 %      2      ... reference time
5 %      3      ... baselines
6 %      4      ... a priori baseline lengths
7 %      5      ... estimated baseline lengths
8 %      6      ... formal errors
9 % all units are in meters
10 %*****
11 %
```

Vienna VLBI Software 2.3

File Models Estimation Global solution Scheduling Simulation Run Plotting Help

EOPBAS output

Output Earth orientation parameters estimated in VieVS

Process list

Sessions currently selected in "File - Set input files"

Select: exercise_EOP_output.mat

Subfolder (LEVEL1, LEVEL3)

Current subfolder (*)

Select: /

Output file

Default: /VieVS/OUT/eop_*.txt or 'basRep_*.txt'

Select:

Detailed EOP data

Ordered EOP data

VieVS-formatted EOP data

Baseline length repeatability options

Min number of baseline observations

Command window output (NaN = 1 estimate)

Simple plot

Write baselines to OUT/

Write base length repeatability

Function `repeatab.m` and `bas_out.m` are available in `/OUT/`

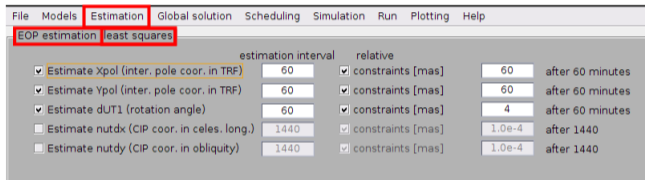
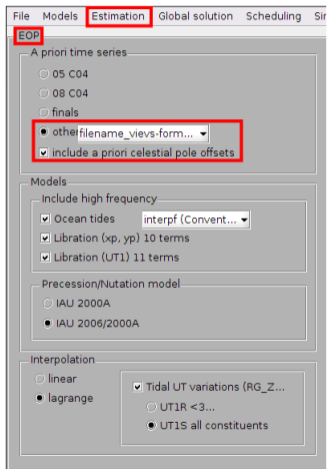
They can be used separately and work similar to `eop_out.m`. Please, find a description in the header of the file for detailed information, otherwise contact us

An example of everyday needs

I hourly estimate high-frequency Earth Rotation Parameters (ERP)

What do I do for that?...

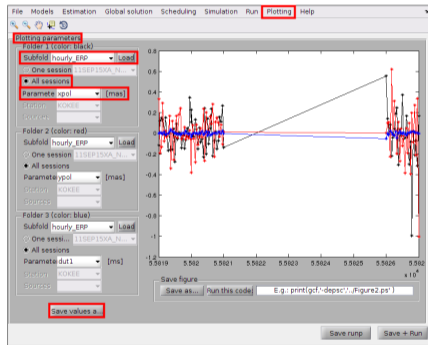
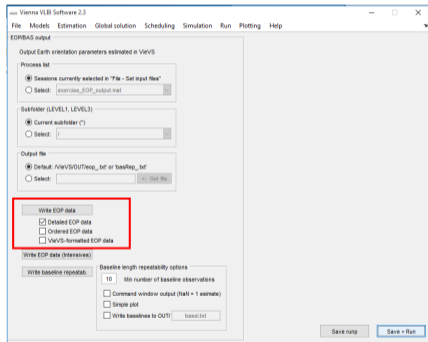
Regular process: hourly resolution ERP



A priori time series:
/EOP/filename_views-format.txt

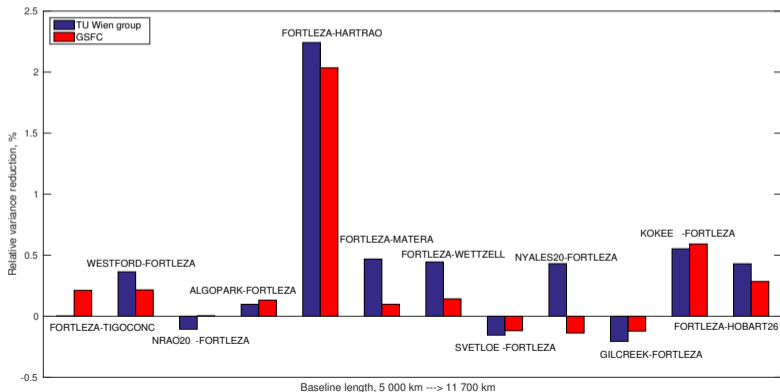
and Run to get results!

Results: Take away



Write base length repeatability usage

Tidal Atmosphere Loading



Thank you for your attention!

