TECHNISCHE UNIVERSITÄT WIEN
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VIE_SETUP

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VieVS User Workshop

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Vienna

What is VIE_SETUP?

- The Graphical User Interface (GUI) of VieVS.
- Allows you to:
  - Select which session(s) to analyse.
  - Specify the models to be used in the analysis and what parameters to estimate, etc.

What does VIE_SETUP do?

- Creates the process_list (saved in **WORK** directory):
  - Contains the names of the sessions to be processed.
- Creates parameter files (one for each session, saved in (a subdirectory of) **DATA/LEVEL0**):
  - Contains what models etc. to be used.
  - Option for VIE_LSM
- Creates the runp (saved in **WORK** directory):
  - What parts of vievs should be run (VIE_INIT, VIE_MOD etc.)
  - Names of the OPT and outlier directories.
  - Names of subdirectories where data is saved.

Running VIE_SETUP

- VIE_SETUP is normally run everytime you start VieVS:

vievs

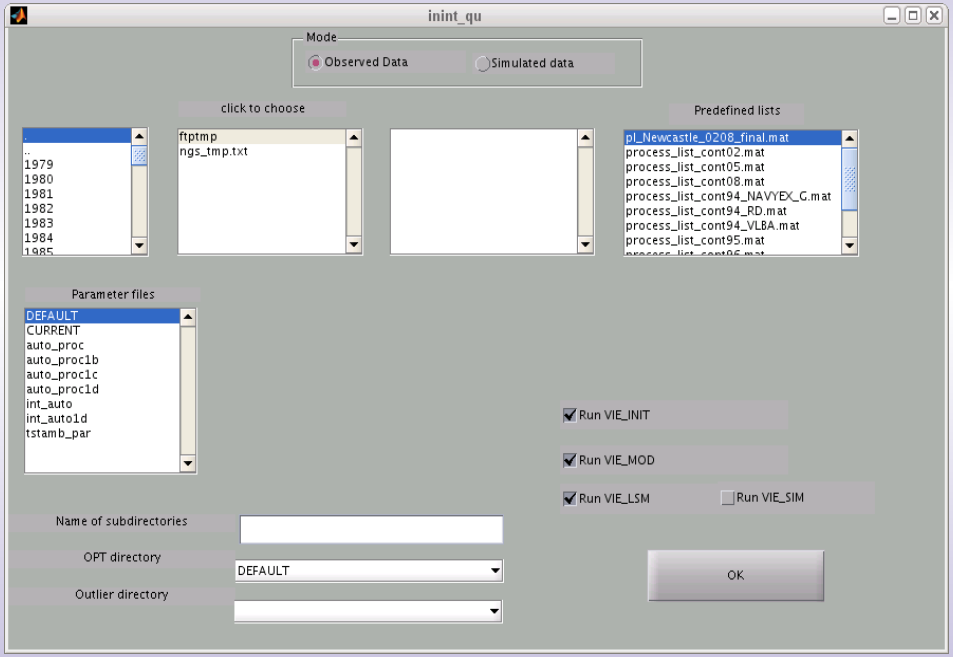
- To run only VIE_SETUP:

vievs('setup')

- To run VieVS without running VIE_SETUP (batch mode):

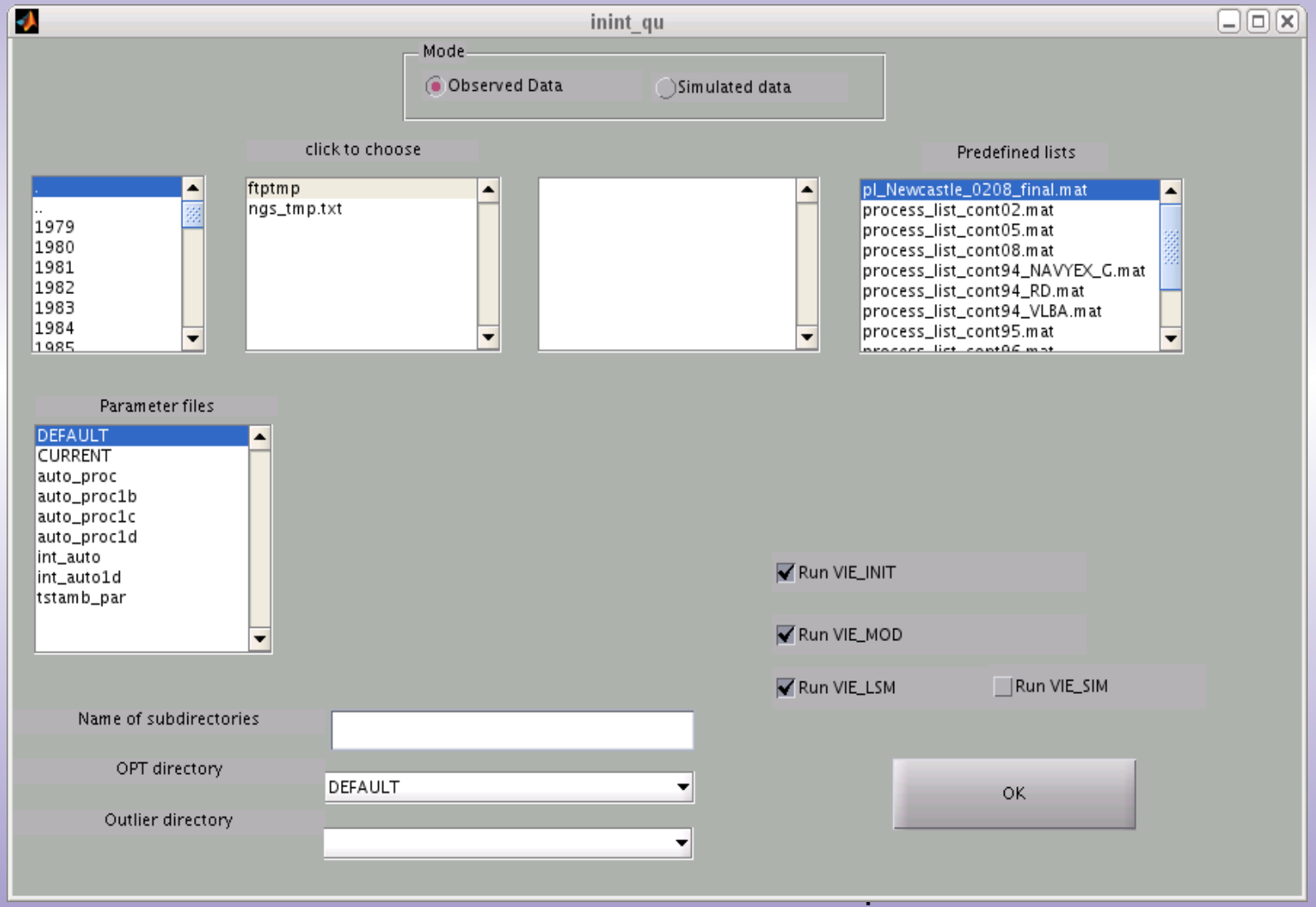
vievs('batch')

The first VIE_SETUP GUI

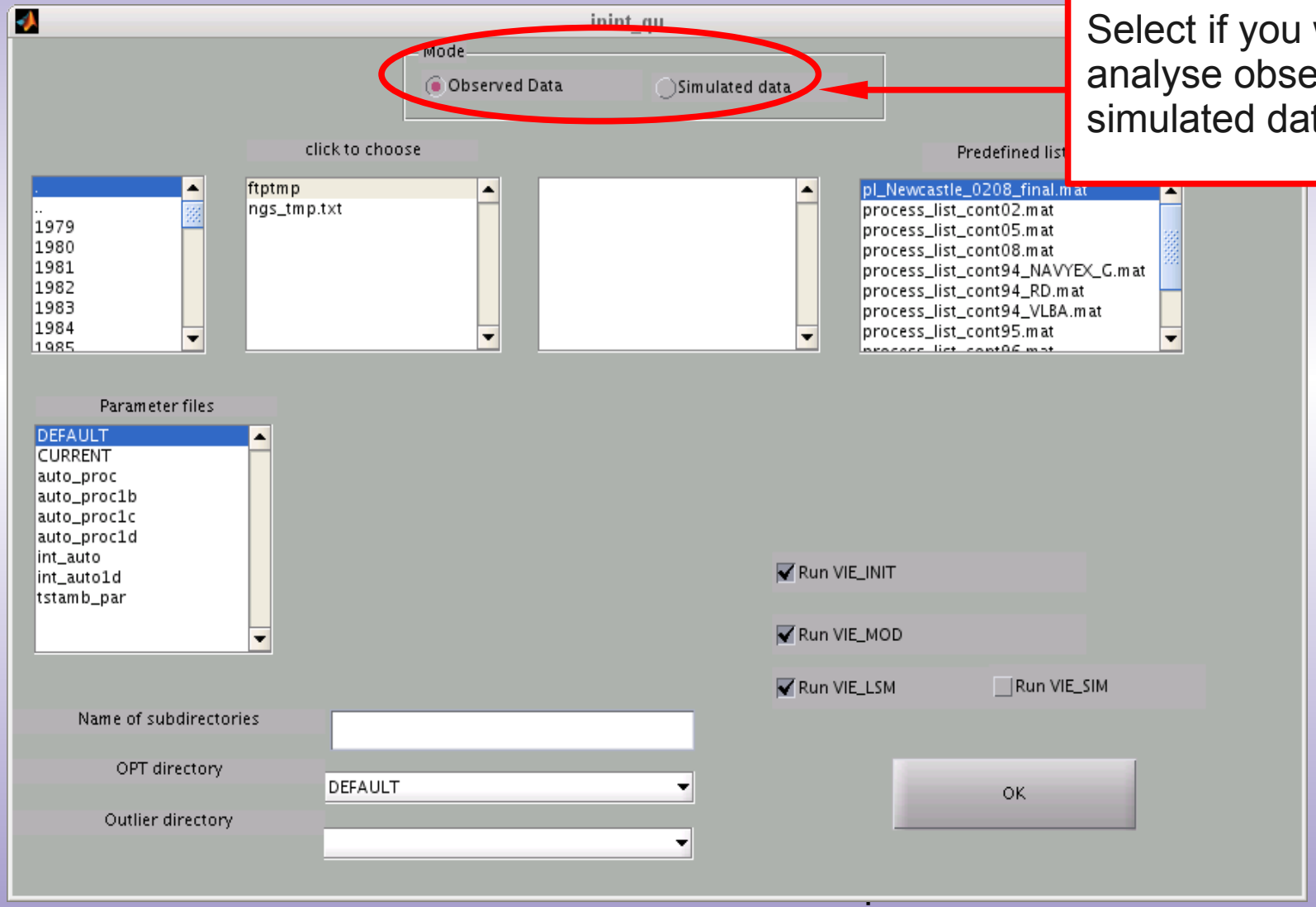


- Select sessions to be processed.
- Select a predefined parameter file
- Select which part of VieVS to run
- Select subdirectories for saving data, OPT file directory, and outlier directory.

1st GUI

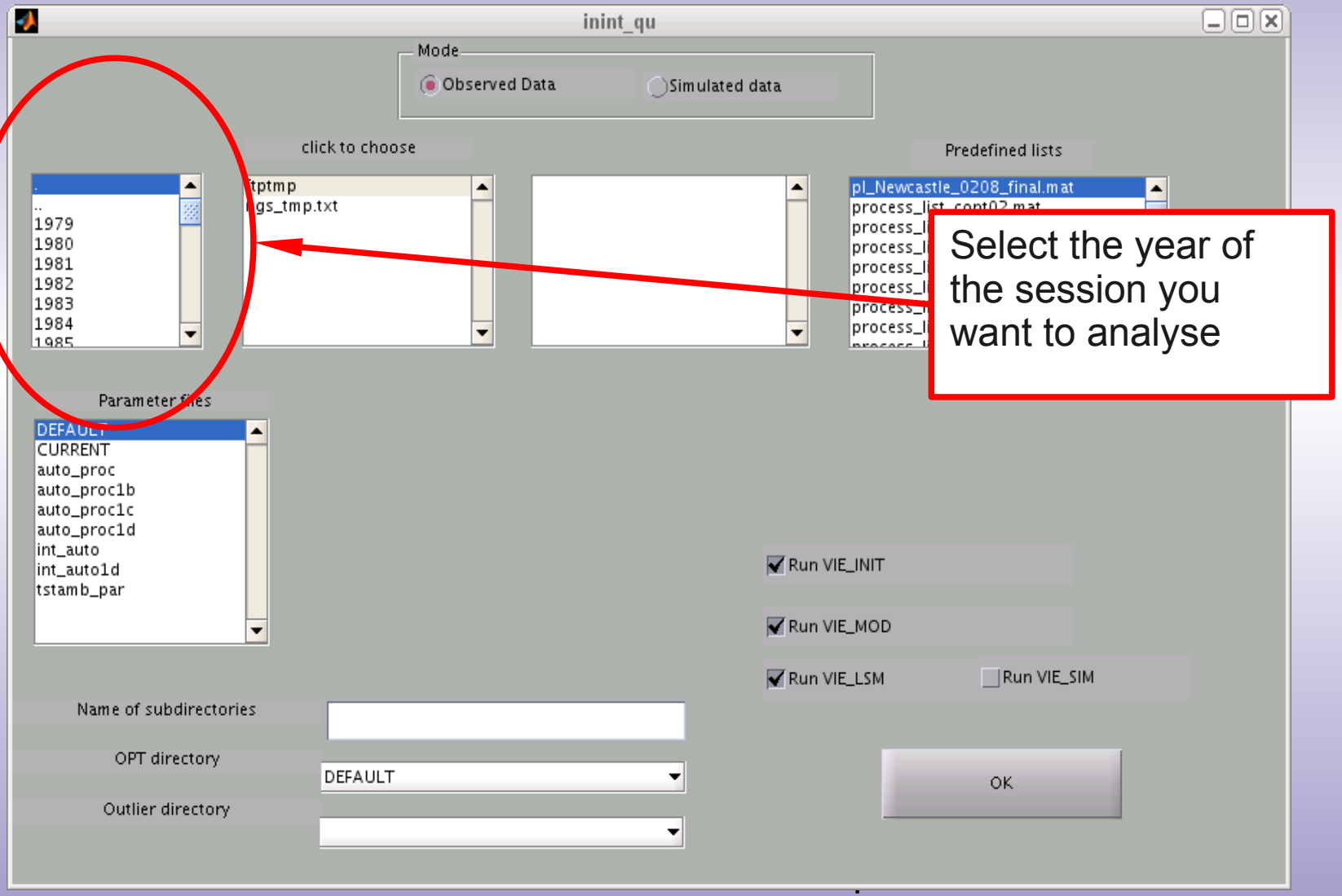

inint_qu
Mode
Observed Data
Simulated data
click to choose
Predefined lists
.
..
1979
1980
1981
1982
1983
1984
1985
ftptmp
ngs_tmp.txt
pl_Newcastle_0208_final.mat
process_list_cont02.mat
process_list_cont05.mat
process_list_cont08.mat
process_list_cont94_NAVYEX_G.mat
process_list_cont94_RD.mat
process_list_cont94_VLBA.mat
process_list_cont95.mat
Parameter files
DEFAULT
CURRENT
auto_proc
auto_proc1b
auto_proc1c
auto_proc1d
int_auto
int_auto1d
tstamb_par
Run VIE_INIT
Run VIE_MOD
Run VIE_LSM
Run VIE_SIM
Name of subdirectories
OPT directory
DEFAULT
Outlier directory
OK

1st GUI

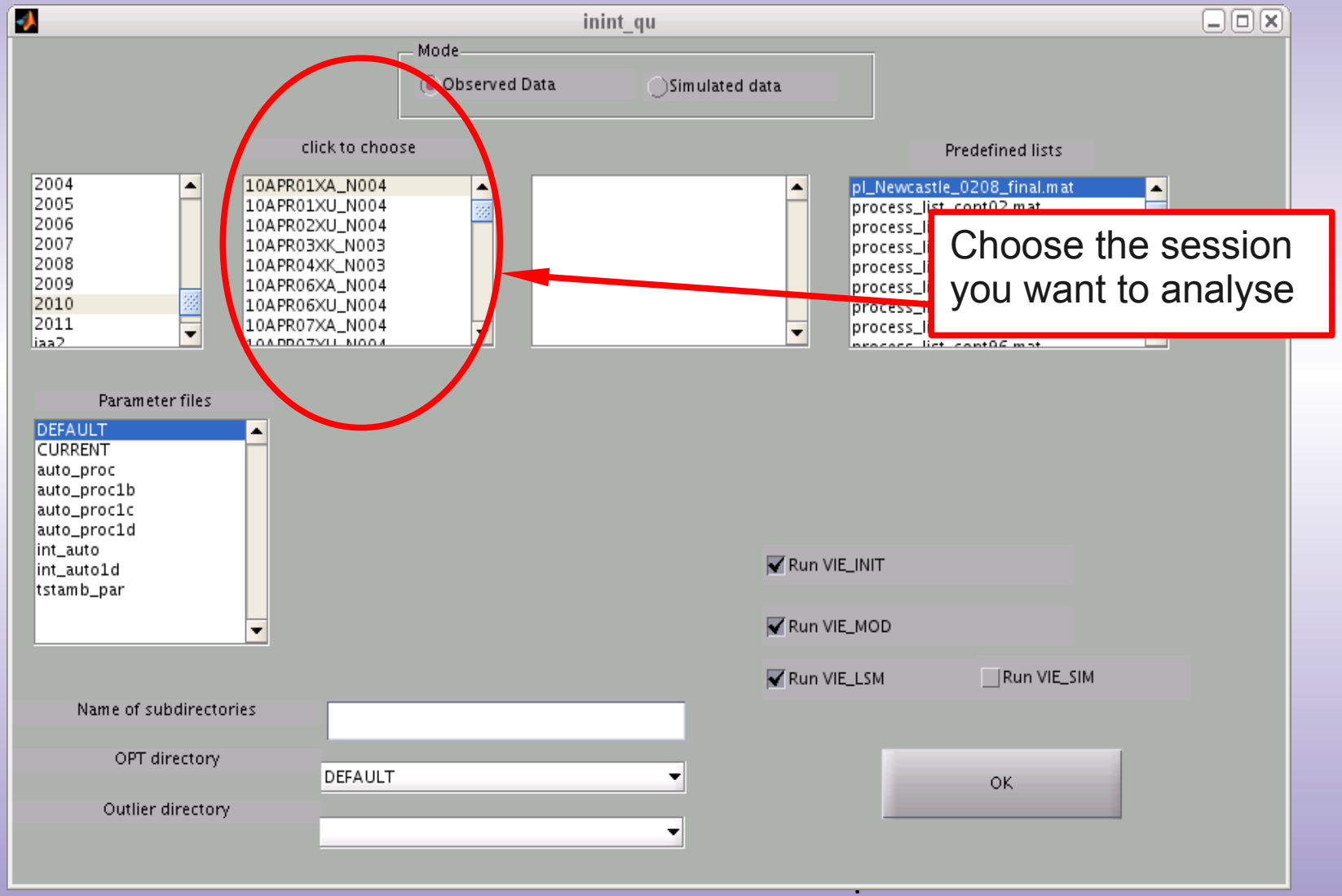


Select if you want to analyse observed or simulated data

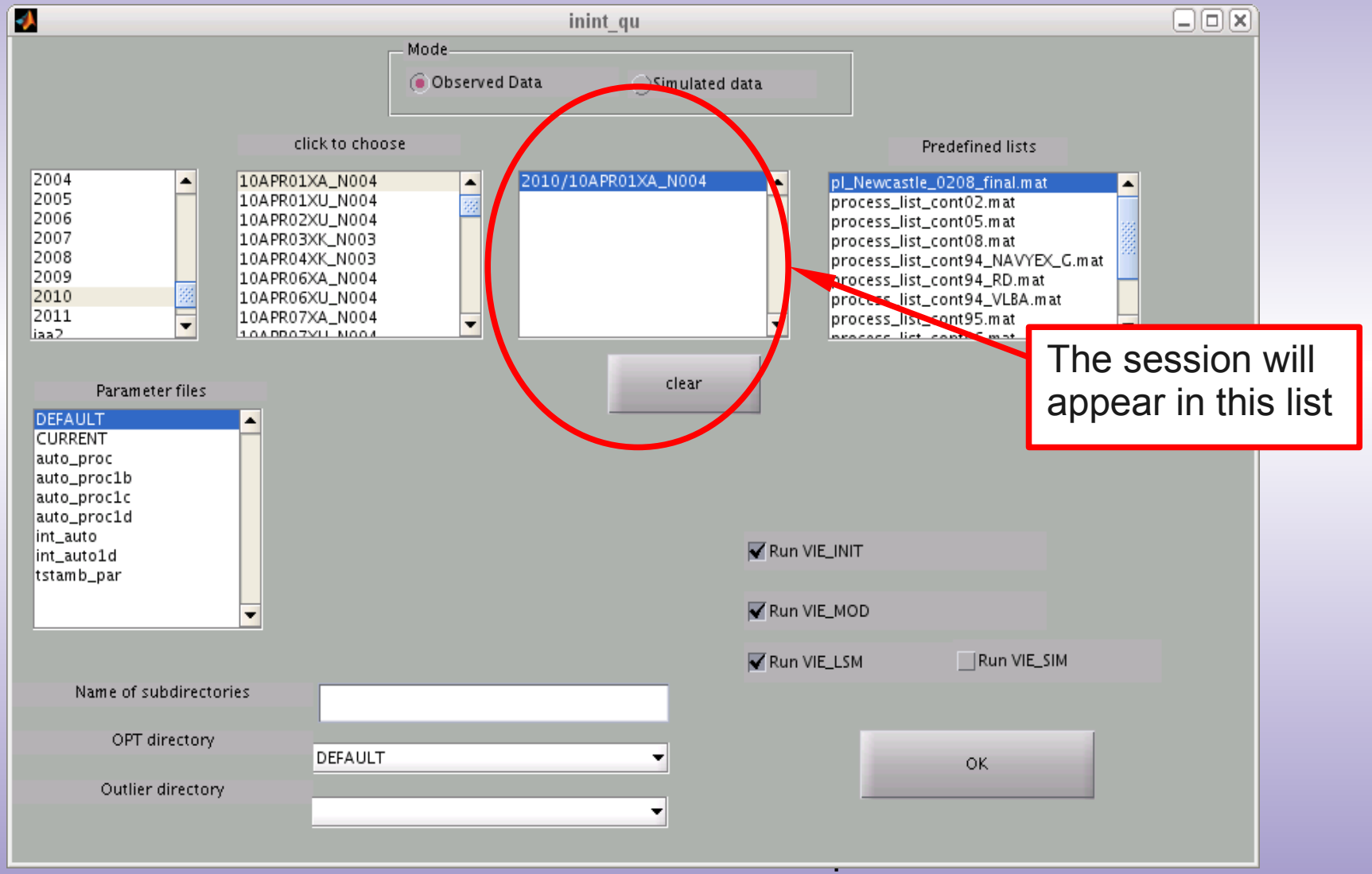
1st GUI


inint_qu
Mode
Observed Data
Simulated data
click to choose
Predefined lists
1979
1980
1981
1982
1983
1984
pl_Newcastle_0208_final.mat
Parameter files
DEFAULT
CURRENT
auto_proc
auto_proc1b
auto_proc1c
auto_proc1d
int_auto
int_auto1d
tstamb_par
Run VIE_INIT
Run VIE_MOD
Run VIE_LSM
Run VIE_SIM
Name of subdirectories
OPT directory
DEFAULT
Outlier directory
OK
Select the year of the session you want to analyse

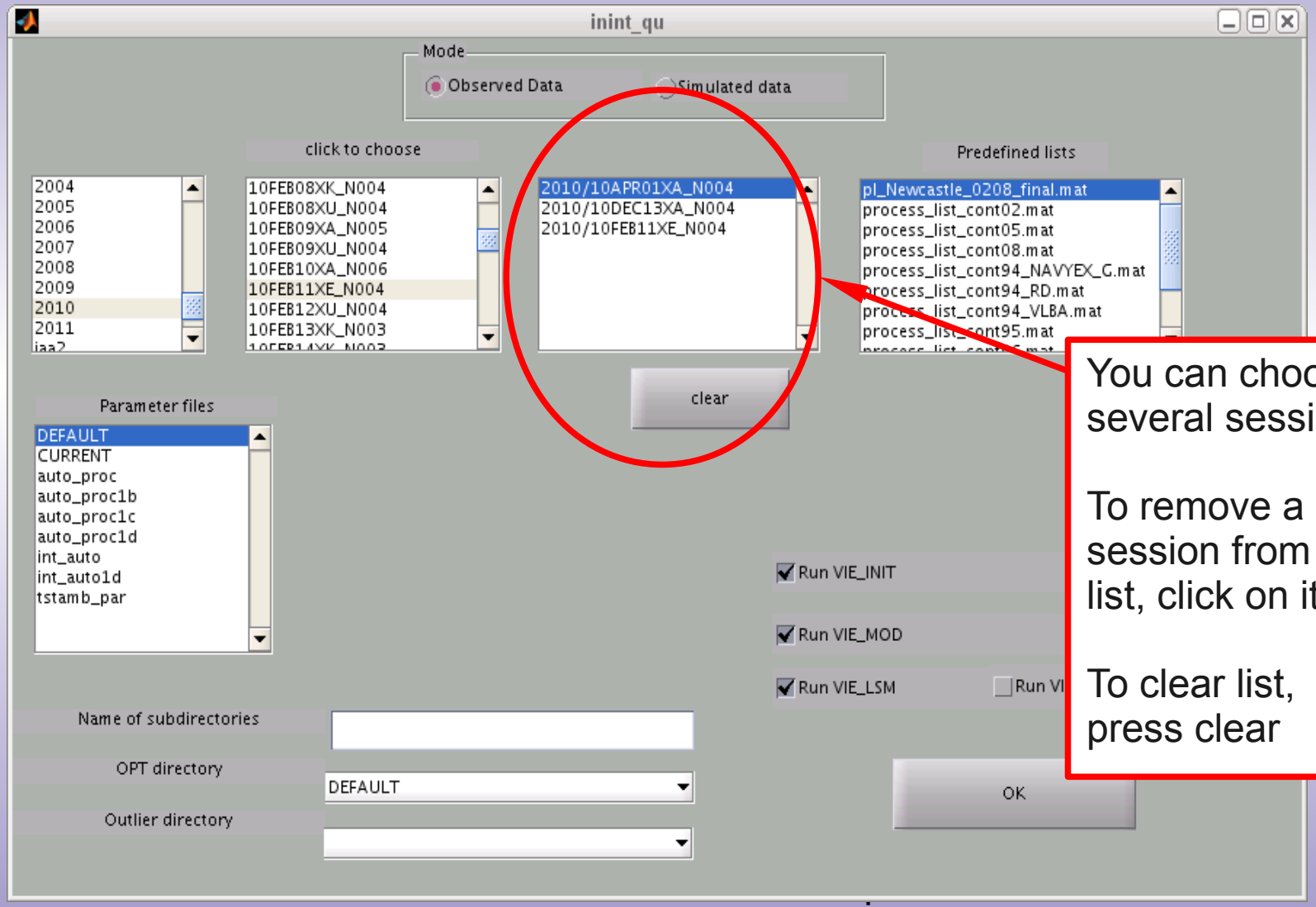
1st GUI


inint_qu
Mode
Observed Data
Simulated data
click to choose
Predefined lists
2004
2005
2006
2007
2008
2009
2010
2011
10APR01XA_N004
10APR01XU_N004
10APR02XU_N004
10APR03XK_N003
10APR04XK_N003
10APR06XA_N004
10APR06XU_N004
10APR07XA_N004
pl_Newcastle_0208_final.mat
Choose the session you want to analyse
Parameter files
DEFAULT
CURRENT
auto_proc
auto_proc1b
auto_proc1c
auto_proc1d
int_auto
int_auto1d
tstamb_par
Run VIE_INIT
Run VIE_MOD
Run VIE_LSM
Run VIE_SIM
Name of subdirectories
OPT directory
DEFAULT
Outlier directory
OK

1st GUI


inint_qu
Mode
Observed Data
Simulated data
click to choose
Predefined lists
2004
2005
2006
2007
2008
2009
2010
2011
10APR01XA_N004
10APR01XU_N004
10APR02XU_N004
10APR03XK_N003
10APR04XK_N003
10APR06XA_N004
10APR06XU_N004
10APR07XA_N004
2010/10APR01XA_N004
pl_Newcastle_0208_final.mat
process_list_cont02.mat
process_list_cont05.mat
process_list_cont08.mat
process_list_cont94_NAVYEX_G.mat
process_list_cont94_RD.mat
process_list_cont94_VLBA.mat
process_list_cont95.mat
clear
Parameter files
DEFAULT
CURRENT
auto_proc
auto_proc1b
auto_proc1c
auto_proc1d
int_auto
int_auto1d
tstamb_par
Run VIE_INIT
Run VIE_MOD
Run VIE_LSM
Run VIE_SIM
Name of subdirectories
OPT directory
DEFAULT
Outlier directory
OK
The session will appear in this list

1st GUI

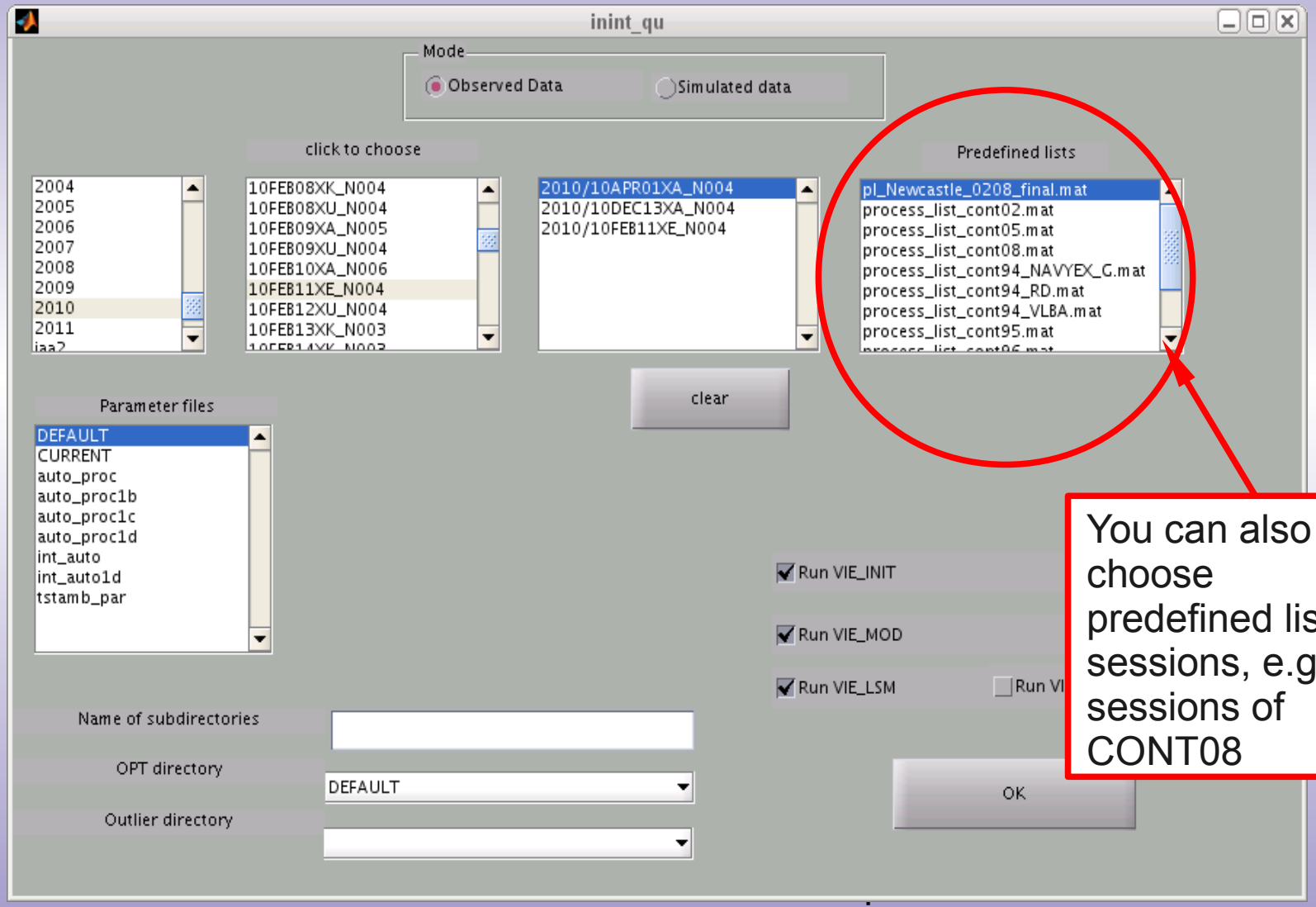


You can choose several sessions

To remove a session from the list, click on it

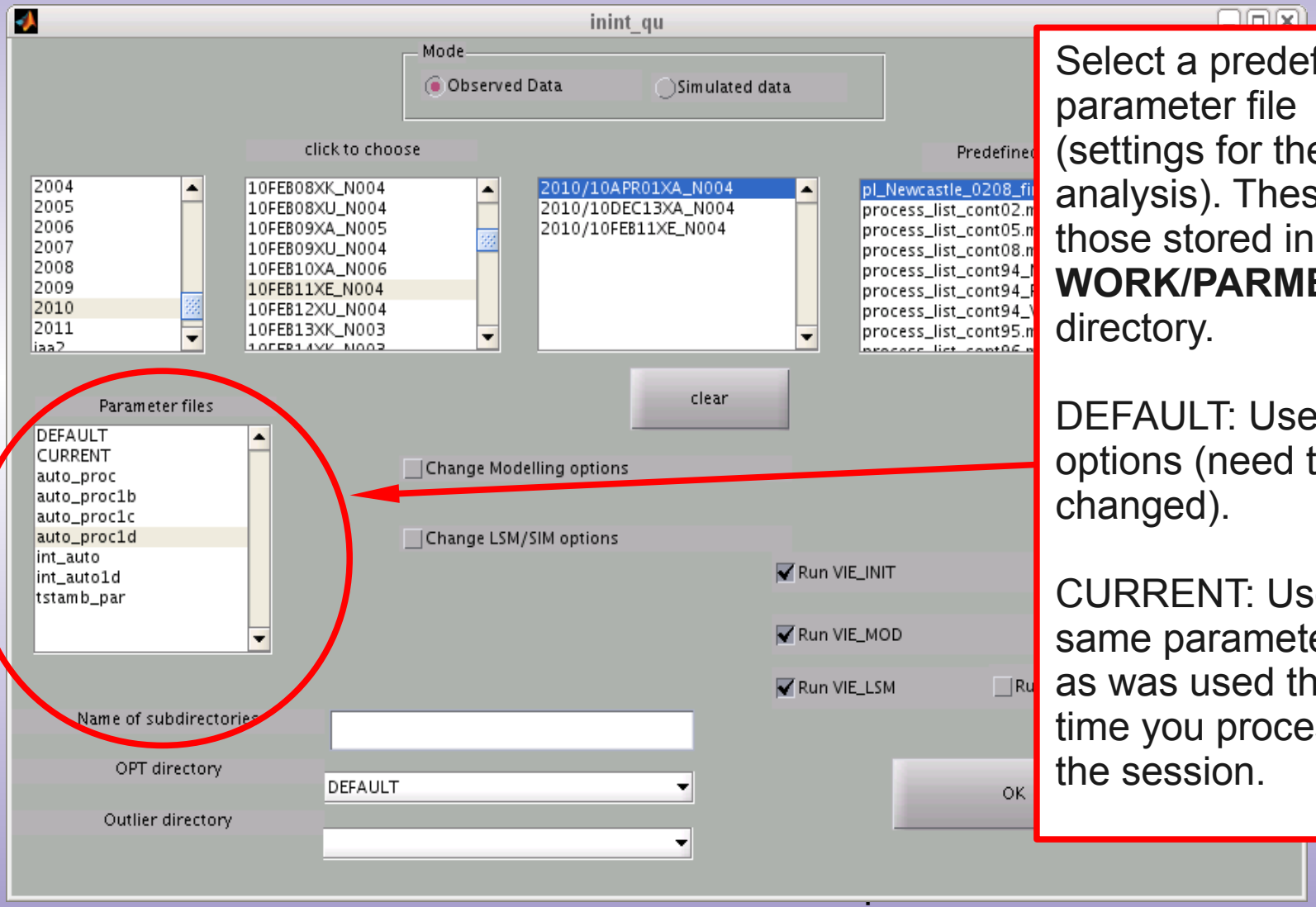
To clear list, press clear

1st GUI



You can also choose predefined list of sessions, e.g. all sessions of CONT08

1st GUI

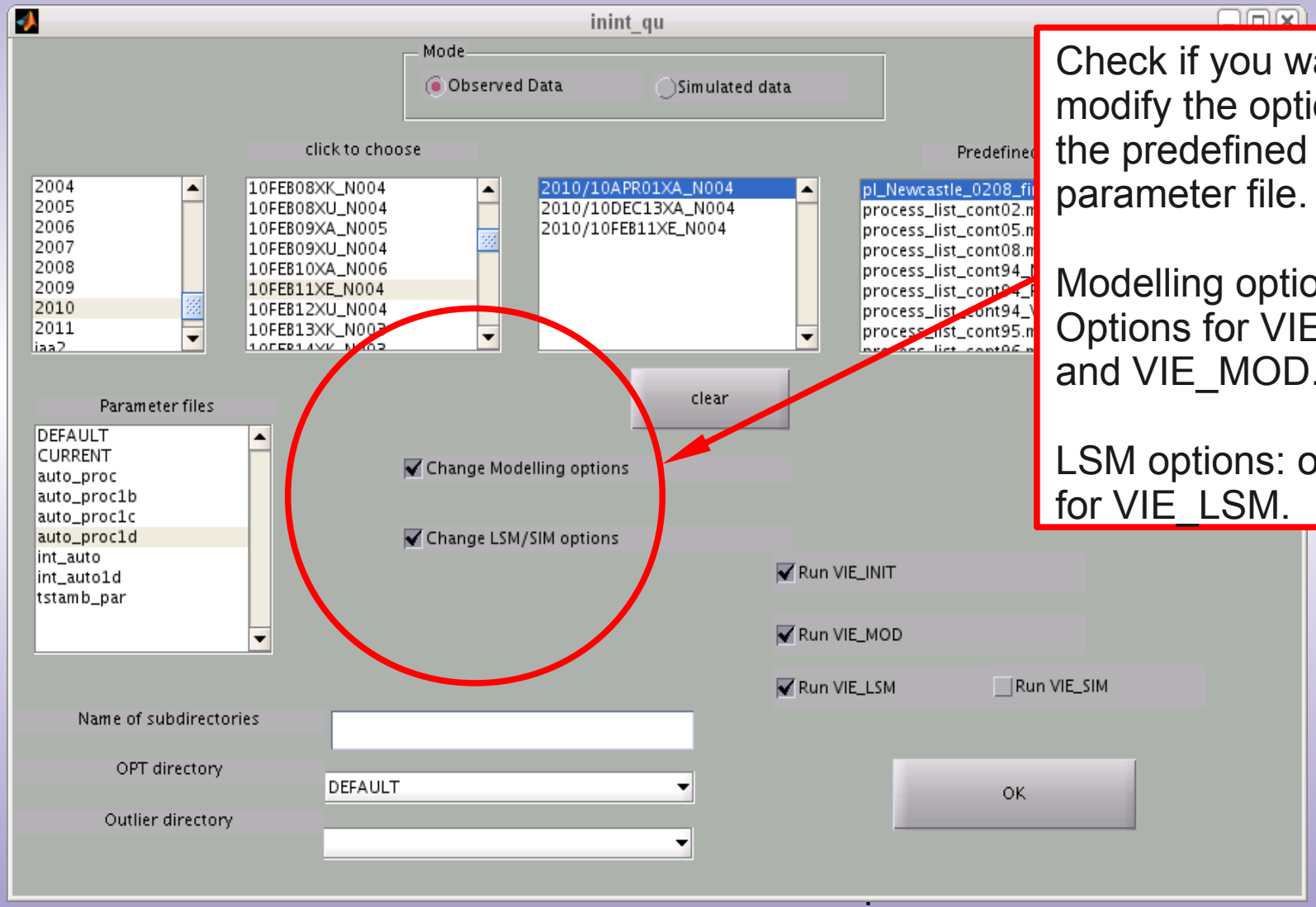


Select a predefined parameter file (settings for the analysis). These are those stored in the **WORK/PARMETERS** directory.

DEFAULT: Use default options (need to be changed).

CURRENT: Uses the same parameter file as was used the last time you processed the session.

1st GUI

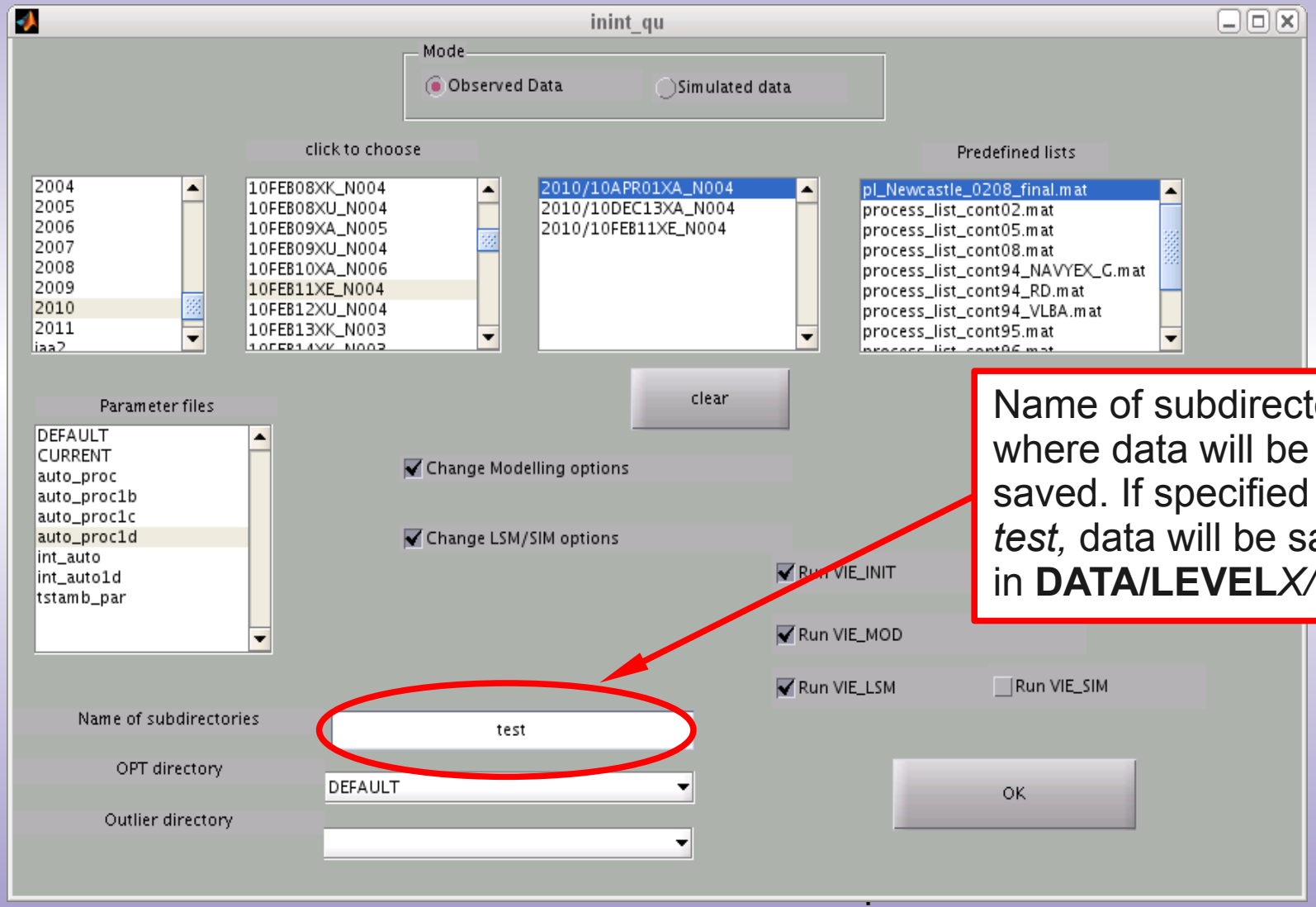


Check if you want to modify the options in the predefined parameter file.

Modelling options: Options for VIE_INIT and VIE_MOD.

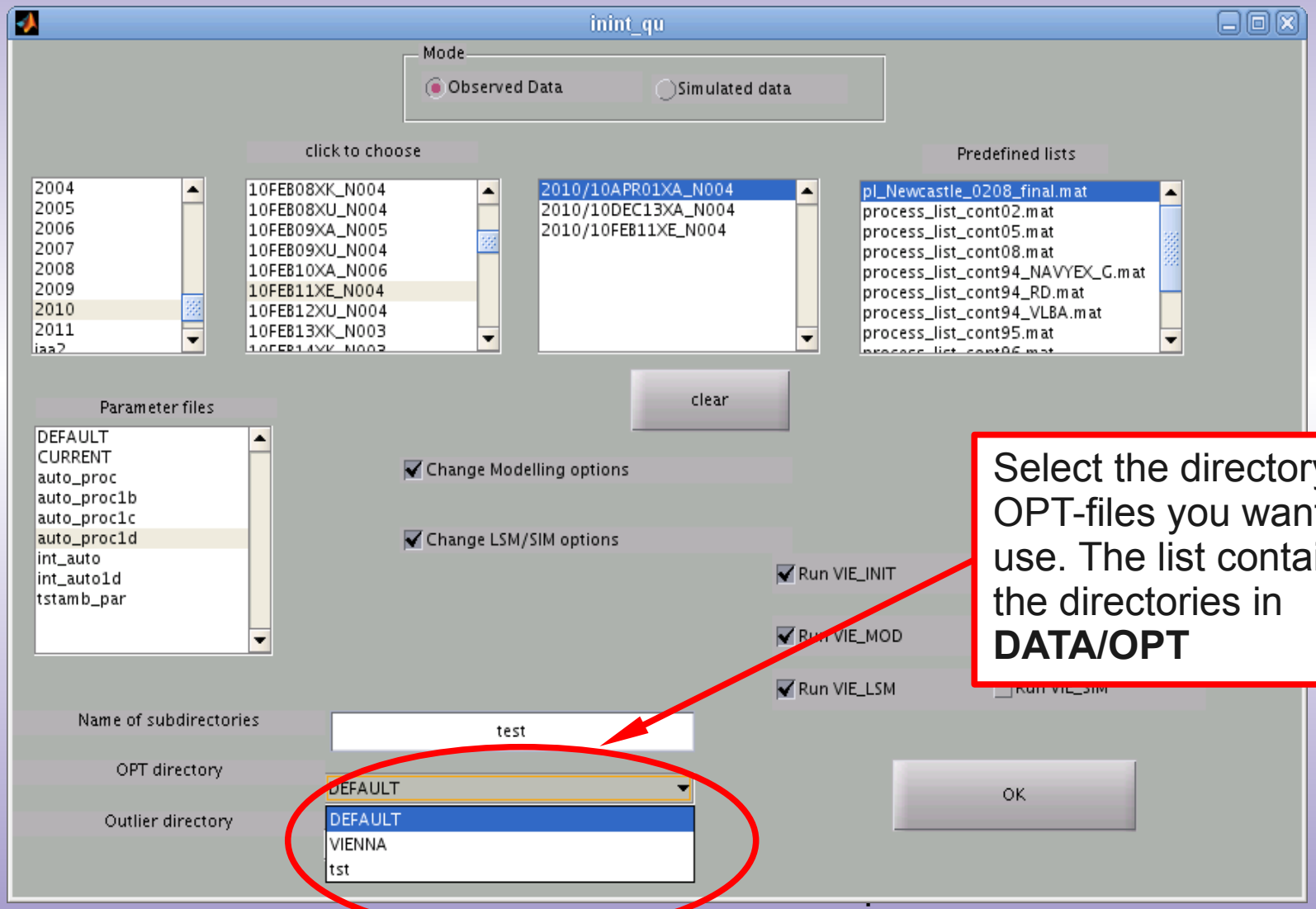
LSM options: options for VIE_LSM.

1st GUI



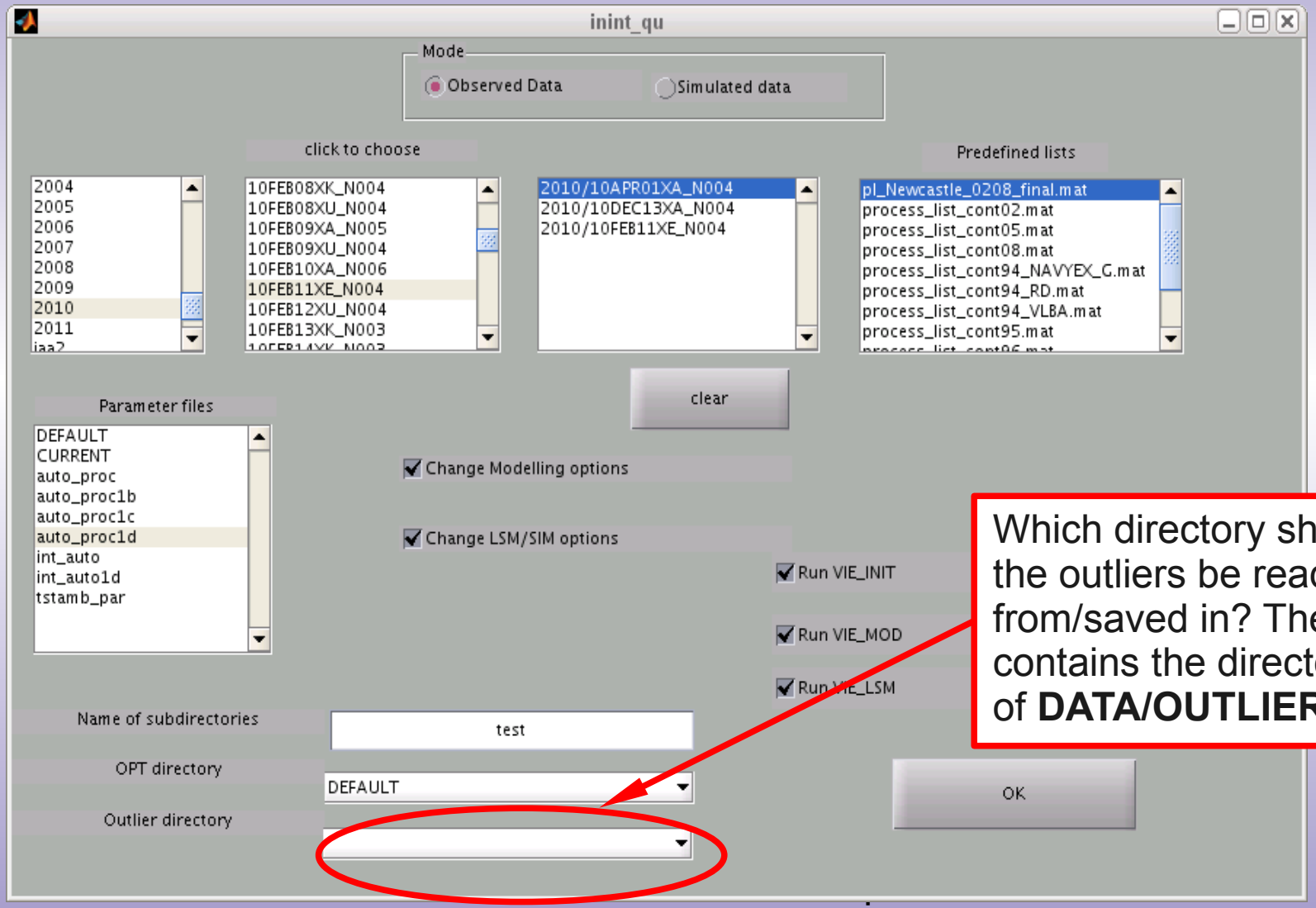
Name of subdirectory where data will be saved. If specified to *test,* data will be saved in **DATA/LEVEL***X/test/*

1st GUI



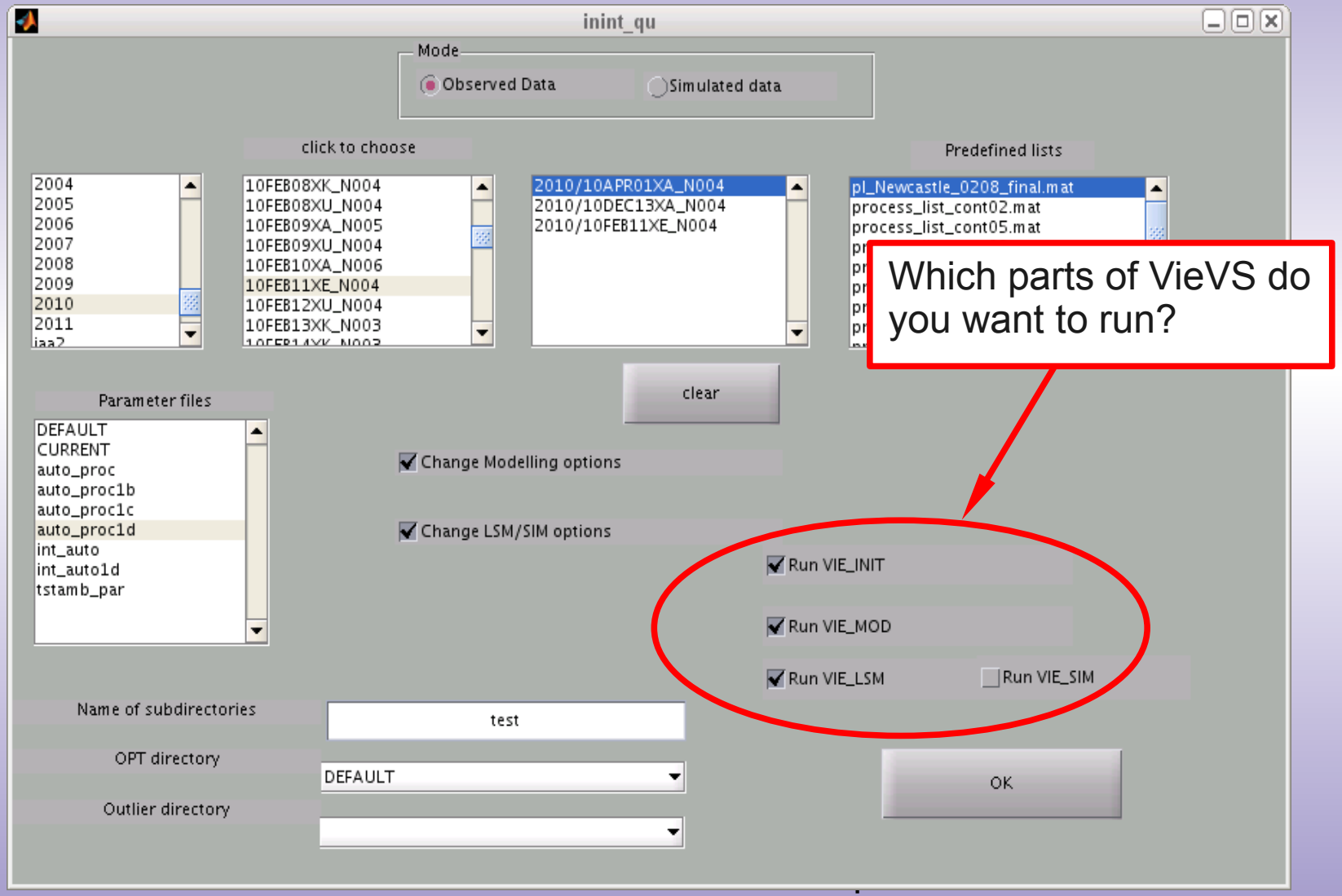
Select the directory of OPT-files you want to use. The list contains the directories in **DATA/OPT**

1st GUI

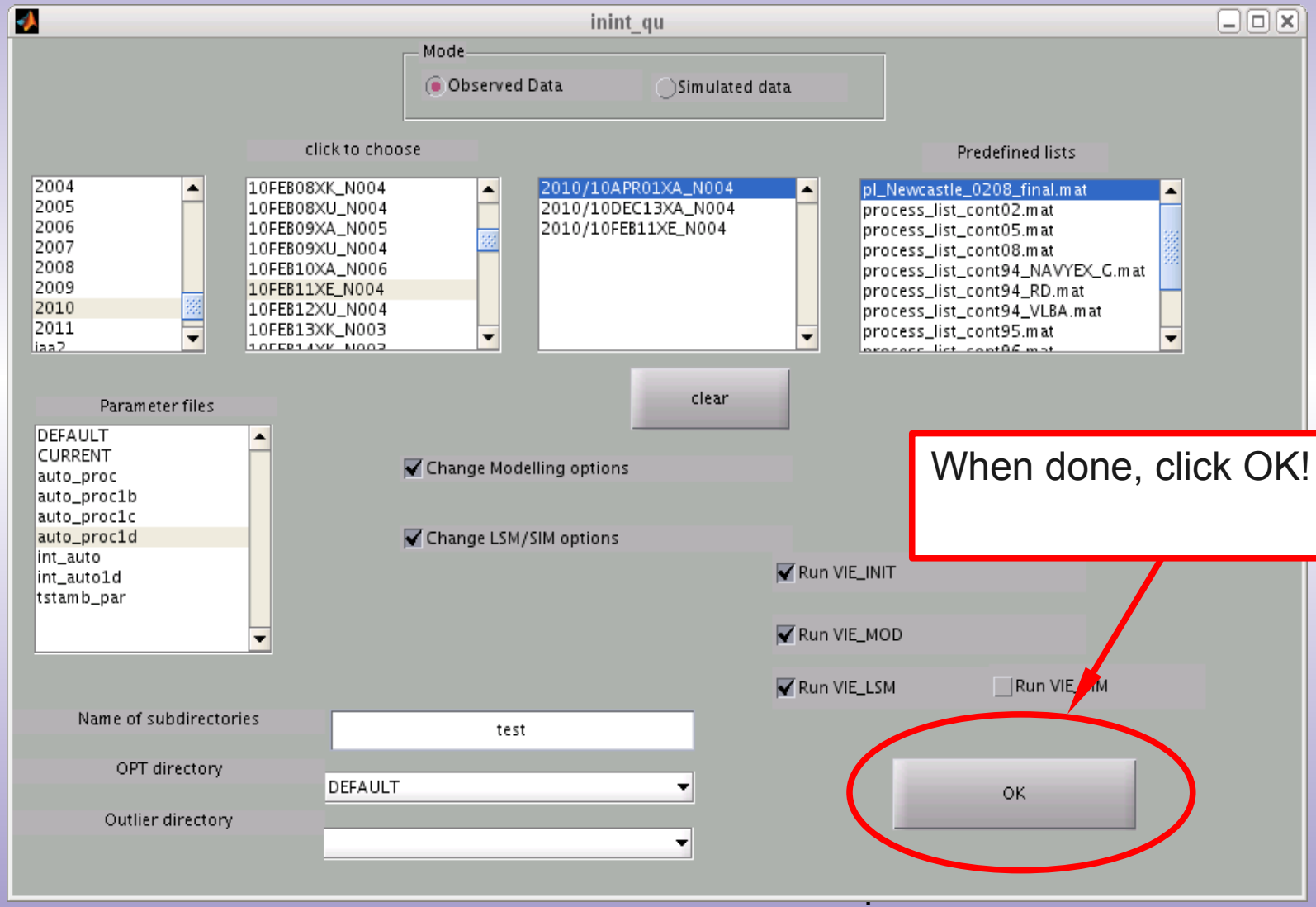


Which directory should the outliers be read from/saved in? The list contains the directories of **DATA/OUTLIER**

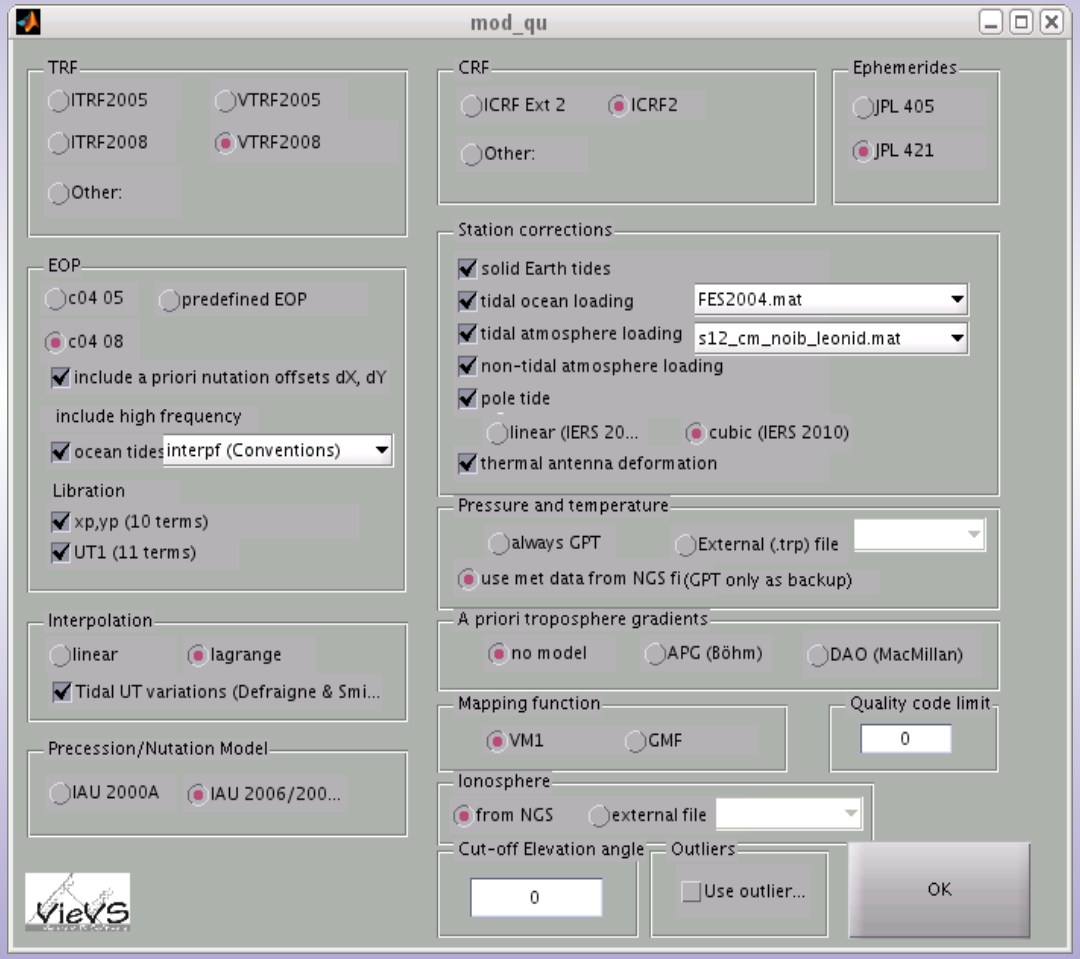
1st GUI


inint_qu
Mode
Observed Data
Simulated data
click to choose
Predefined lists
2004
2005
2006
2007
2008
2009
2010
2011
10FEB08XK_N004
10FEB08XU_N004
10FEB09XA_N005
10FEB09XU_N004
10FEB10XA_N006
10FEB11XE_N004
10FEB12XU_N004
10FEB13XK_N003
2010/10APR01XA_N004
2010/10DEC13XA_N004
2010/10FEB11XE_N004
pl_Newcastle_0208_final.mat
process_list_cont02.mat
process_list_cont05.mat
clear
Parameter files
DEFAULT
CURRENT
auto_proc
auto_proc1b
auto_proc1c
auto_proc1d
int_auto
int_auto1d
tstamb_par
Change Modelling options
Change LSM/SIM options
Run VIE_INIT
Run VIE_MOD
Run VIE_LSM
Run VIE_SIM
Name of subdirectories
test
OPT directory
DEFAULT
Outlier directory
OK
Which parts of VieVS do you want to run?

1st GUI


inint_qu
Mode
Observed Data
Simulated data
click to choose
Predefined lists
2004
2005
2006
2007
2008
2009
2010
2011
10FEB08XK_N004
10FEB08XU_N004
10FEB09XA_N005
10FEB09XU_N004
10FEB10XA_N006
10FEB11XE_N004
10FEB12XU_N004
10FEB13XK_N003
2010/10APR01XA_N004
2010/10DEC13XA_N004
2010/10FEB11XE_N004
pl_Newcastle_0208_final.mat
process_list_cont02.mat
process_list_cont05.mat
process_list_cont08.mat
process_list_cont94_NAVYEX_G.mat
process_list_cont94_RD.mat
process_list_cont94_VLBA.mat
process_list_cont95.mat
clear
Parameter files
DEFAULT
CURRENT
auto_proc
auto_proc1b
auto_proc1c
auto_proc1d
int_auto
int_auto1d
tstamb_par
Change Modelling options
Change LSM/SIM options
Run VIE_INIT
Run VIE_MOD
Run VIE_LSM
Run VIE_SIM
Name of subdirectories
test
OPT directory
DEFAULT
Outlier directory
OK
When done, click OK!

VIE_INIT/VIE_MOD GUI

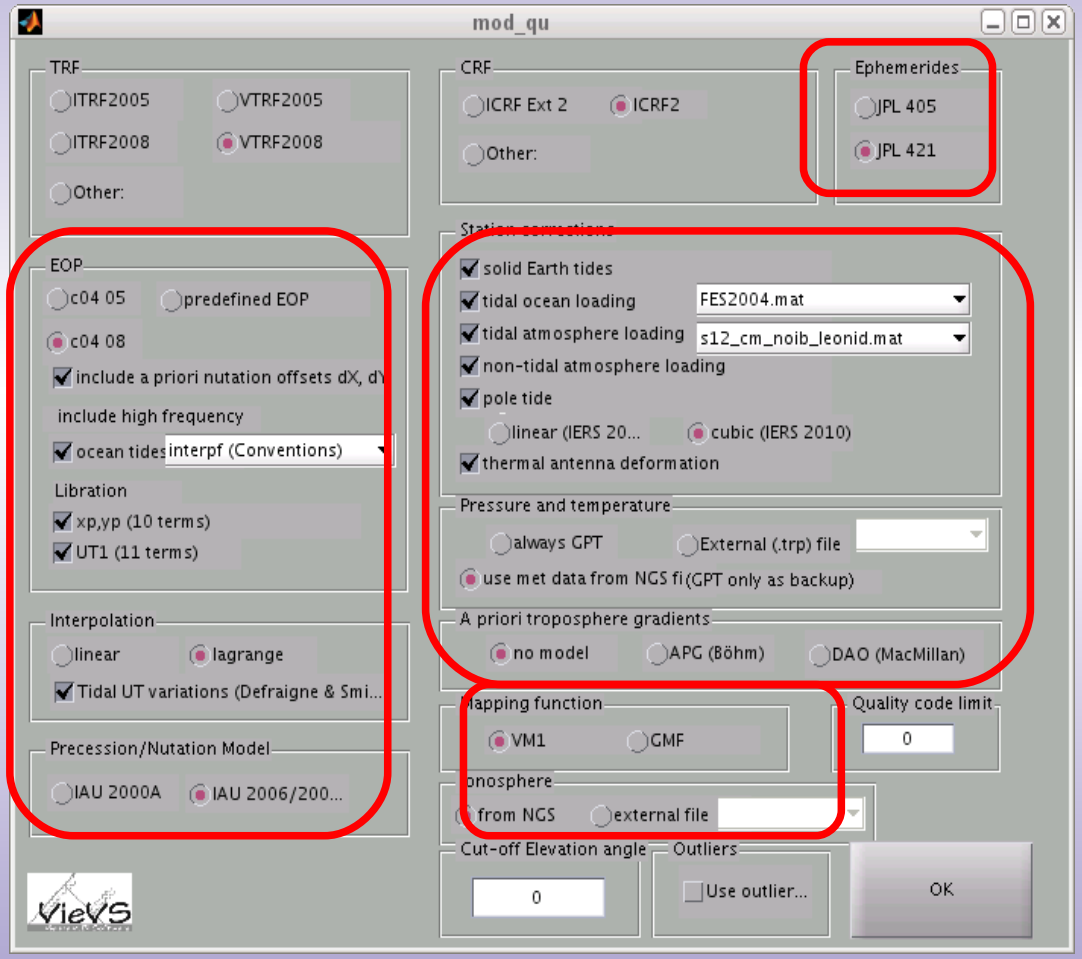


- Select what models etc to use in VIE_INIT and VIE_MOD
- More information in respective presentation

VIE_INIT/VIE_MOD GUI

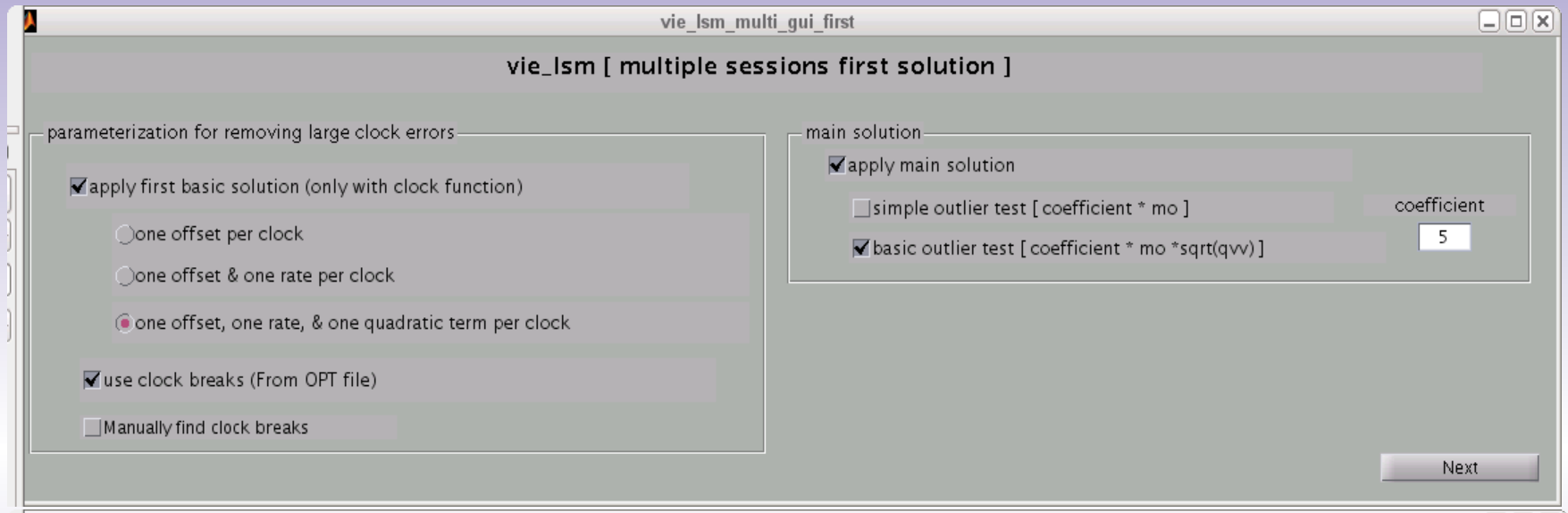
VIE_INIT Options

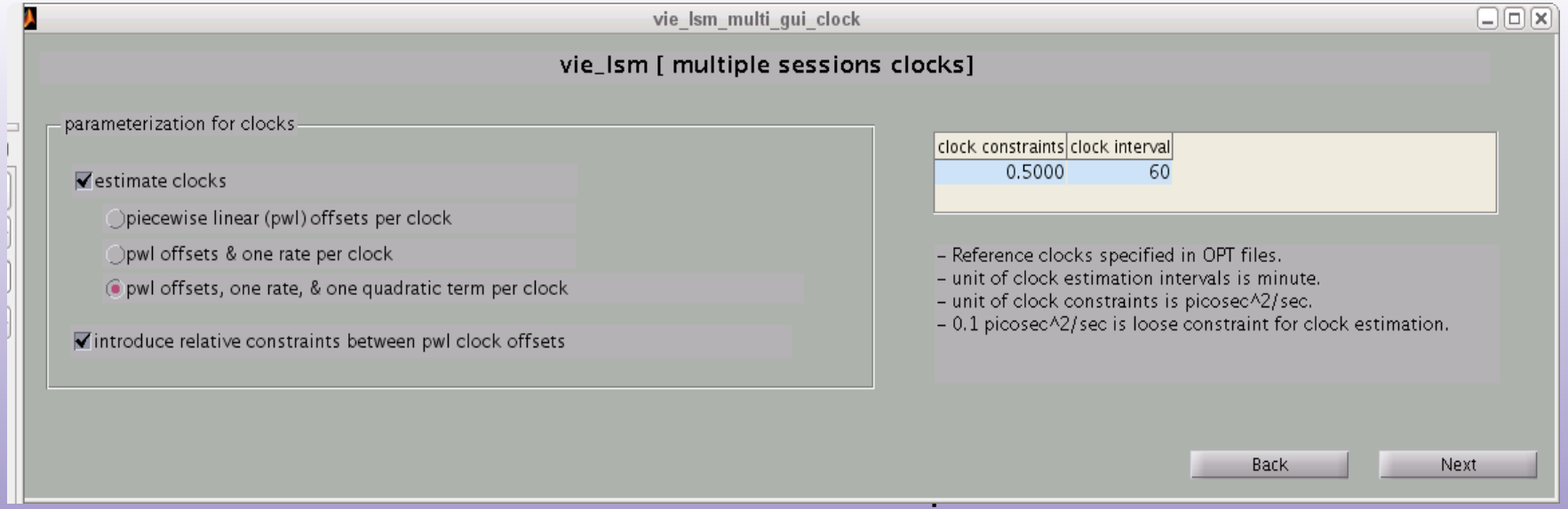
VIE_INIT/VIE_MOD GUI



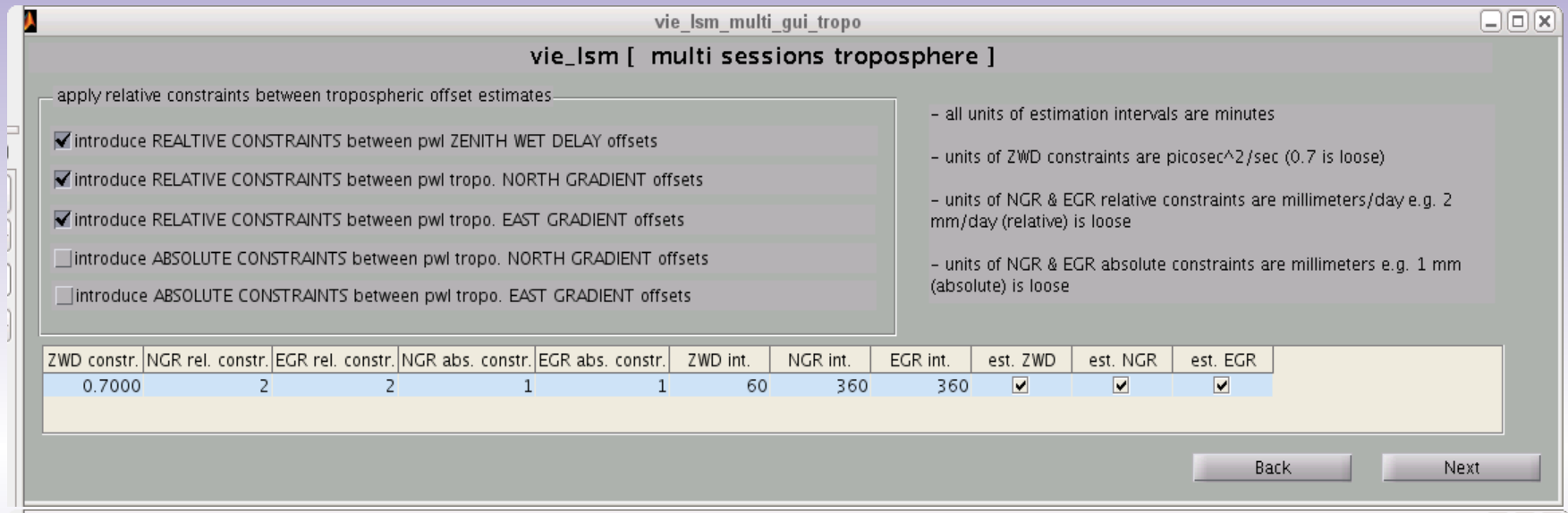
VIE_MOD Options

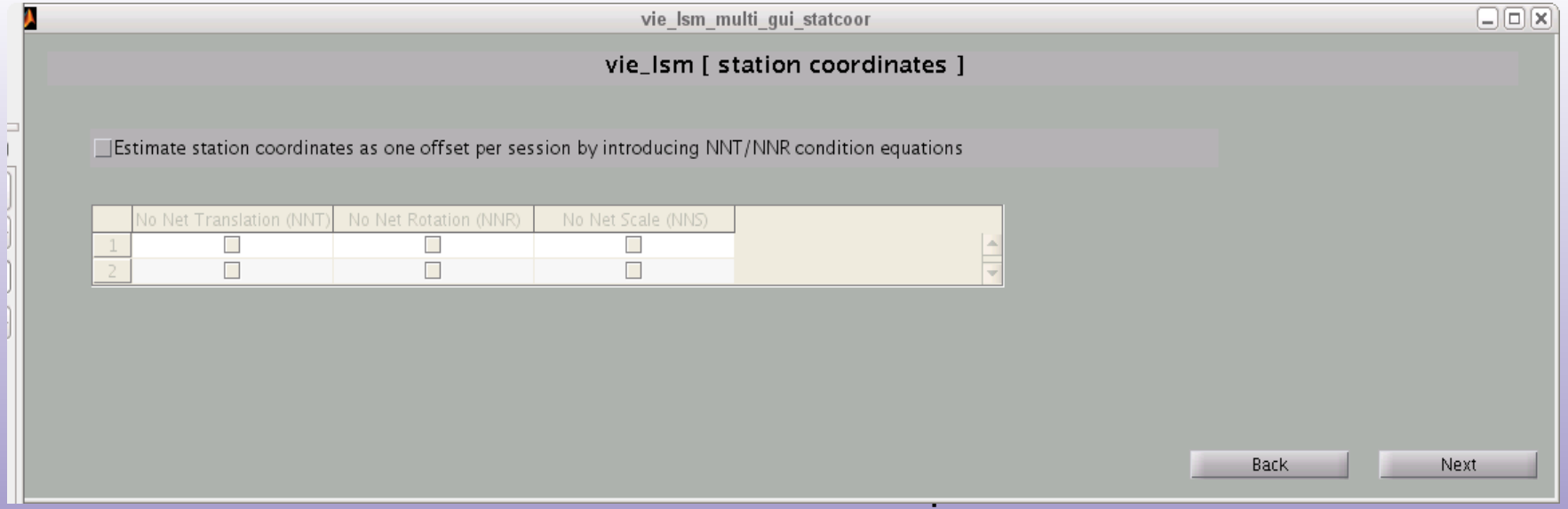
VIE_LSM GUIs


vie_lsm_multi_gui_first
vie_lsm [multiple sessions first solution]
parameterization for removing large clock errors
apply first basic solution (only with clock function)
one offset per clock
one offset & one rate per clock
one offset, one rate, & one quadratic term per clock
use clock breaks (From OPT file)
Manually find clock breaks
main solution
apply main solution
simple outlier test [coefficient * mo]
basic outlier test [coefficient * mo *sqrt(qvv)]
coefficient
5
Next

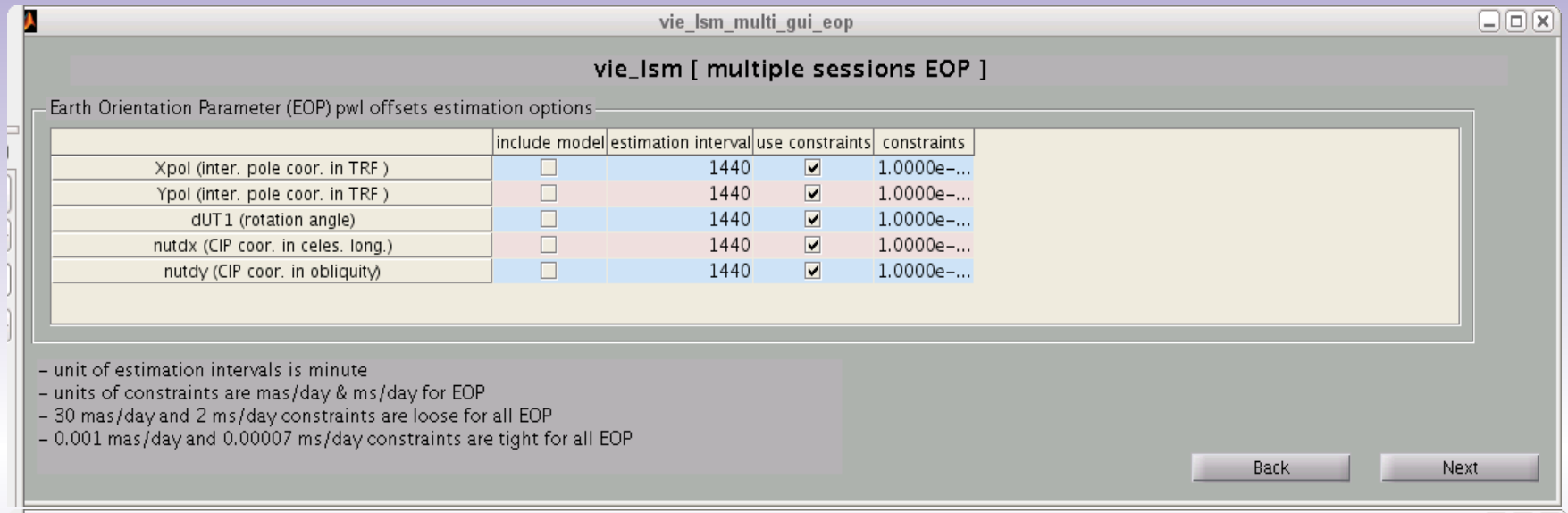

vie_lsm_multi_gui_clock
vie_lsm [multiple sessions clocks]
parameterization for clocks
estimate clocks
piecewise linear (pwl) offsets per clock
pwl offsets & one rate per clock
pwl offsets, one rate, & one quadratic term per clock
introduce relative constraints between pwl clock offsets
clock constraints
clock interval
0.5000
60
– Reference clocks specified in OPT files.
– unit of clock estimation intervals is minute.
– unit of clock constraints is picosec^2/sec.
– 0.1 picosec^2/sec is loose constraint for clock estimation.
Back
Next

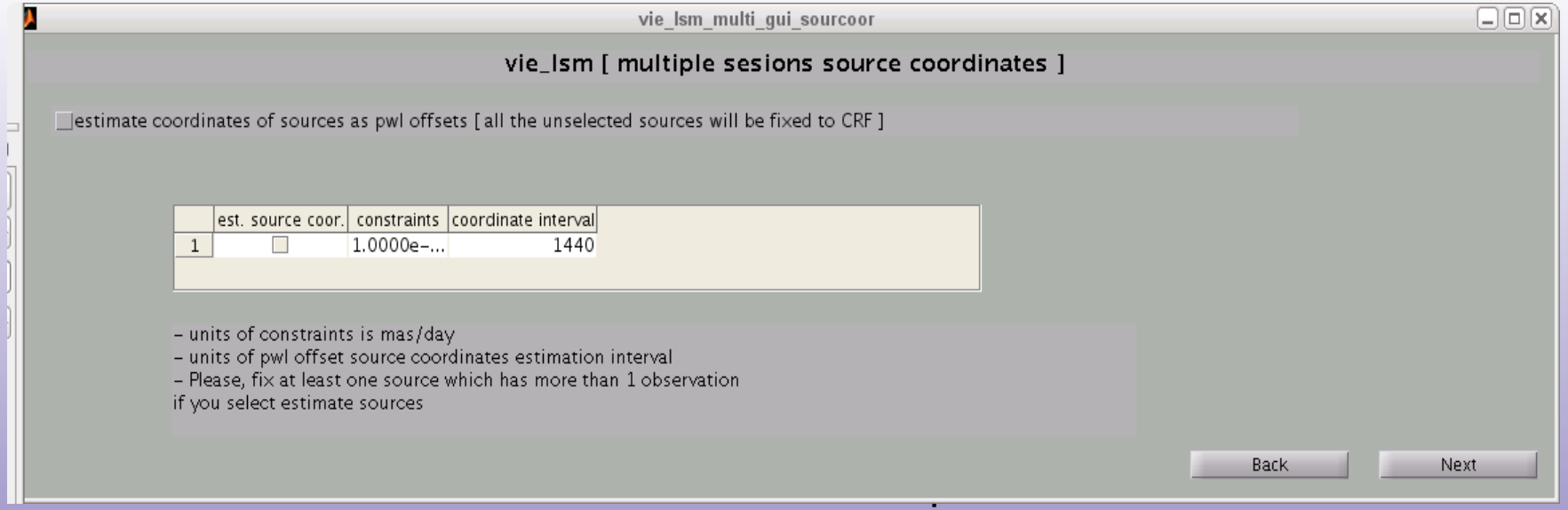
VIE_LSM GUIs


vie_lsm_multi_gui_tropo
vie_lsm [multi sessions troposphere]
apply relative constraints between tropospheric offset estimates
introduce REALTIVE CONSTRAINTS between pwl ZENITH WET DELAY offsets
introduce RELATIVE CONSTRAINTS between pwl tropo. NORTH GRADIENT offsets
introduce RELATIVE CONSTRAINTS between pwl tropo. EAST GRADIENT offsets
introduce ABSOLUTE CONSTRAINTS between pwl tropo. NORTH GRADIENT offsets
introduce ABSOLUTE CONSTRAINTS between pwl tropo. EAST GRADIENT offsets
- all units of estimation intervals are minutes
- units of ZWD constraints are picosec^2/sec (0.7 is loose)
- units of NGR & EGR relative constraints are millimeters/day e.g. 2 mm/day (relative) is loose
- units of NGR & EGR absolute constraints are millimeters e.g. 1 mm (absolute) is loose
ZWD constr. NGR rel. constr. EGR rel. constr. NGR abs. constr. EGR abs. constr. ZWD int. NGR int. EGR int. est. ZWD est. NGR est. EGR
0.7000 2 2 1 1 60 360 360
Back
Next


vie_lsm_multi_gui_statcoor
vie_lsm [station coordinates]
Estimate station coordinates as one offset per session by introducing NNT/NNR condition equations
No Net Translation (NNT)
No Net Rotation (NNR)
No Net Scale (NNS)
1
2
Back
Next

VIE_LSM GUIs


vie_lsm_multi_gui_eop
vie_lsm [multiple sessions EOP]
Earth Orientation Parameter (EOP) pwl offsets estimation options
include model
estimation interval
use constraints
constraints
Xpol (inter. pole coor. in TRF)
Ypol (inter. pole coor. in TRF)
dUT1 (rotation angle)
nutdx (CIP coor. in celes. long.)
nutdy (CIP coor. in obliquity)
1440
1.0000e-...
- unit of estimation intervals is minute
- units of constraints are mas/day & ms/day for EOP
- 30 mas/day and 2 ms/day constraints are loose for all EOP
- 0.001 mas/day and 0.00007 ms/day constraints are tight for all EOP
Back
Next


vie_lsm_multi_gui_sourcoor
vie_lsm [multiple sesions source coordinates]
estimate coordinates of sources as pwl offsets [all the unselected sources will be fixed to CRF]
est. source coor.
constraints
coordinate interval
1
1.0000e-...
1440
- units of constraints is mas/day
- units of pwl offset source coordinates estimation interval
- Please, fix at least one source which has more than 1 observation
if you select estimate sources
Back
Next

VIE_LSM GUIs


vie_lsm_multi_gui_global
vie_lsm [multiple sessions output]
Estimate parameters according to the options in previous GUIs
Prepare N_global and b_global for global solution
No parameters are reduced. (Reduction can be done in VIE_GLOB.) Constraints according to previous GUIs. Conditions on station coordinates are removed. N and b will be stored in DATA/LEVEL2/
write data into SINEX file (DATA/SNX/)
parameters
include into SINEX file
reduce from N_sinex
clock parameters
zenith wet delay
troposphere gradients
parameters
include into SINEX file
reduce from N_sinex
source coordinates
station coordinates
EOP
Add extra parameters to the N matrix
ALLOW FOR STATIONWISE AND SOURCEWISE PARAMETERIZATION FOR EACH SESSION
Back
Finish