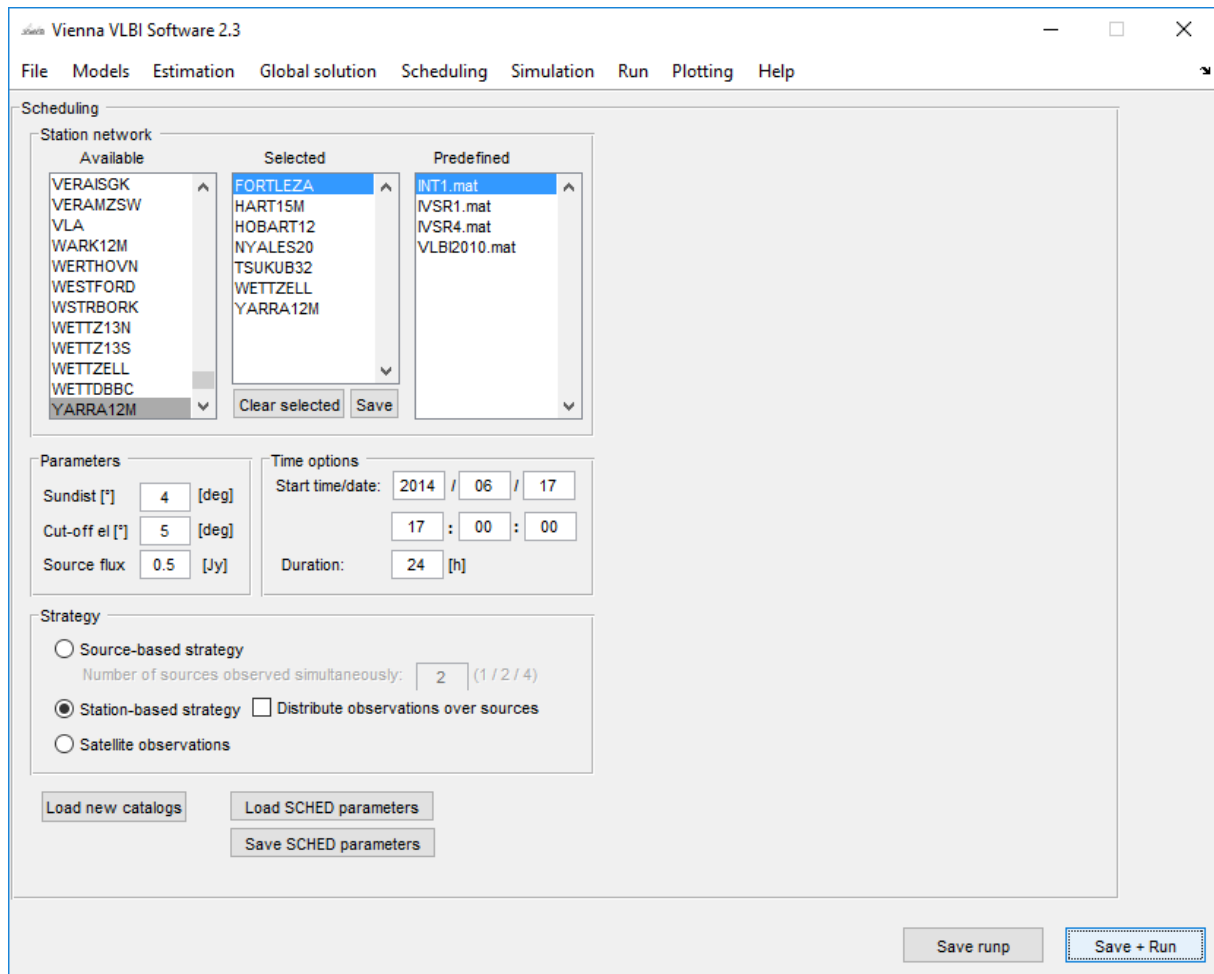


Scheduling exercise

We will schedule the IVS-R1640 session which started on the 17th of June 2014 at 17:00 and lasted 24h. Stations which participated in this session are: FORTLEZA, HOBART12, HART15M, NYALES20, TSUKUB32, WETTZELL and YARRA12M.

Select main parameters in GUI:

The scheduling GUI can be found at Scheduling/General_setup:



- In the “Network” panel you can set the stations which should observe in this session. The “Available” list depicts all available antennas. Click on the antennas you want in your session and they will appear in the “Selected” list. You can save your list and it will appear in the “Predefined” list when you restart VieVS
- Select the start of the session in the “Session start” panel
- Change the main parameters in the “Parameters” panel
 - The distance to the sun can be set to an empirically derived distance of 4°
 - Because of atmospheric turbulences we set the elevation cut-off to 5°
 - You can set the minimum strength of the sources which should be observed to 0.5 Jy
- Select the station-based strategy in the “strategy” panel.

Scheduling/Minor_parameters:

The screenshot shows the 'Minor scheduling parameters and options' dialog box in Vienna VLBI Software 2.3. The window title is 'Vienna VLBI Software 2.3' and the menu bar includes 'File', 'Models', 'Estimation', 'Global solution', 'Scheduling', 'Simulation', 'Run', 'Plotting', and 'Help'. The dialog is divided into three main sections: 'General parameters', 'Quasar observations', and 'Satellite observations'.
In the 'General parameters' section, the 'Experiment code' is 'workshop' and the 'Experiment description' is 'workshop_v1.0'. The 'Minimum SNR' is set to 20 dB for X Band and 15 dB for S Band. The 'Create and use new source file' checkbox is checked. An 'Open param.txt' button is present.
In the 'Quasar observations' section, the 'Observing mode for twin telescopes' is set to 'Multidirectional observations'. The 'Output options' section has 'Write NGS file', 'Write SUM file', and 'Write SKD file' all checked. The 'Sub-directory for output' is '/DATA/SCHED/v1.0'.
In the 'Satellite observations' section, the 'Auxiliary output options' have 'Elevation plot', 'Sky plots, t_int = 15 sec', and 'Print orbit data to CW' all checked. The 'Orbit calculation options' have 'Init. propagation interval [min]: 15'. The 'Station network for satellite observations' section has 'Use separate station network for satellites' unchecked. The 'Available' list contains: AIPA, ALGOPARK, ARECIBO, ARIES_4M, ARIES_9M, ATCA, BADARY, and BR-VI.BA. The 'Selected' list is empty. A 'Clear selected' button is at the bottom of the station network section.
At the bottom right of the dialog, there are two buttons: 'Save runp' and 'Save + Run'.

- Tick all the boxes in the “Output” panel
- Check “Create and use new source file”
- Specify a sub directory for output
- Choose a nice experiment code name and description

The CATALOG files:

The CATALOG files are files which include all the information needed (station, source and observing parameters) for the schedule. They can be found in the \CATALOG folder.

Always use the newest CATALOG files which can be accessed at:
(<ftp://gemini.gsfc.nasa.gov/pub/sked/>).

Pressing (**don't do that now**, because we need the CATALOG files provided by us) "Load new catalogs" downloads the recent CATALOG files for you.

CATALOG files provided by GSFC:

- antenna.cat → information about antennas (slew speed, dish diameter etc.).
- equip.cat → information about station equipment (recorders, SEFD etc.).
- flux.cat → flux density (strength) of sources
- freq.cat → definition of channel setup
- loif.cat → setups for intermediate frequency channel and local oscillator assignments
- mask.cat → horizon mask information of stations
- modes.cat → definition of observing modes
- postiton.cat → antenna coordinates
- rec.cat → recording modes
- rx.cat → station receiver setup
- source.cat → position of sources
- tracks.cat → tracks assignment

Additional parameter files from VieVS

- down.txt → specific downtime of station (station won't observe in the set time window)
- param.txt → additional minor parameters
- psource.txt → select source of interest, e.g. source 0059+581 should be observed in a certain interval
- snrmin.txt → set other SNR targets for different stations
- tagalong.txt → set one station as tagalong (it won't influence the others)
- twin.txt → specify twin telescopes
- ...

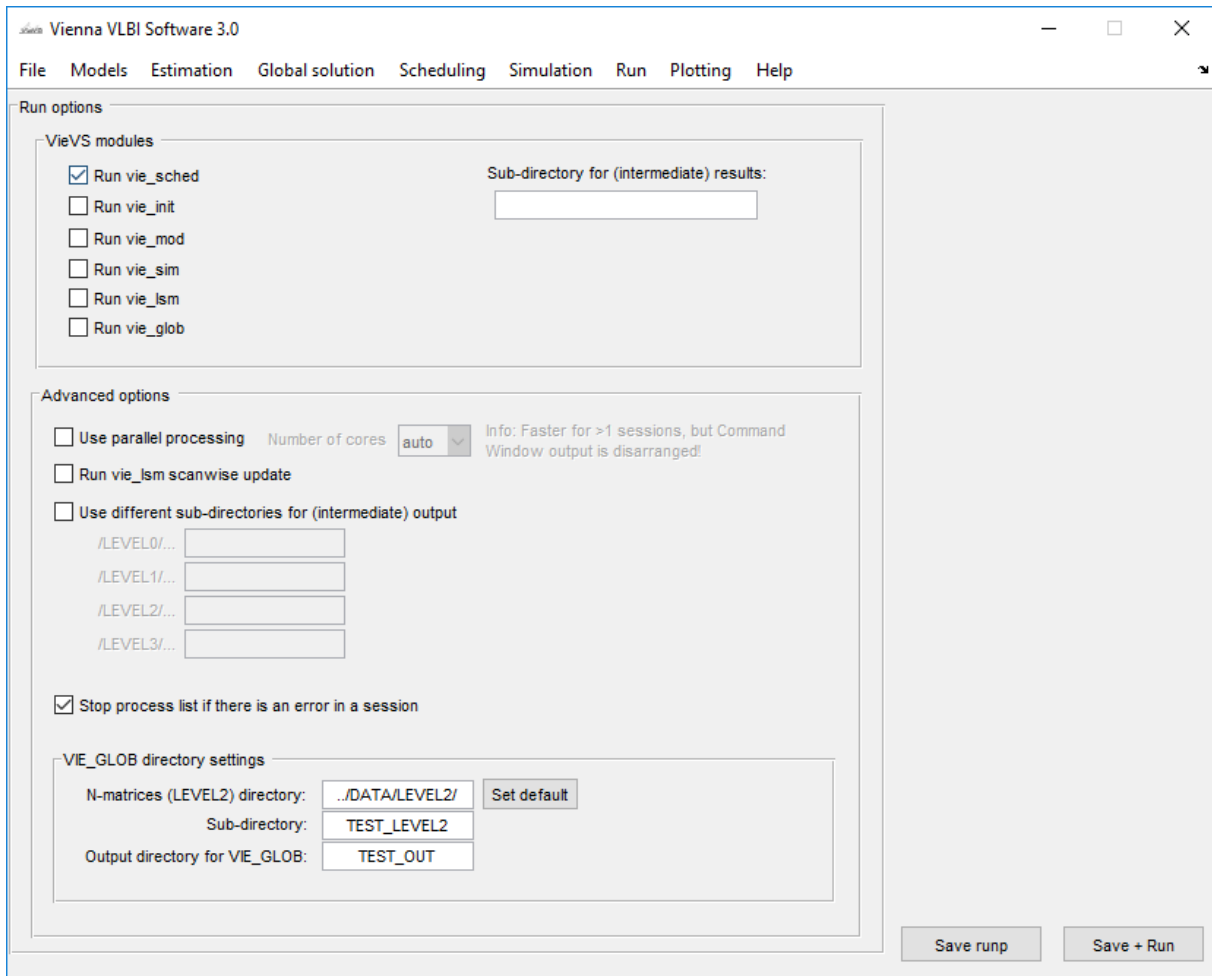
Select minor parameters in param.txt:

Most important parameters which should be adjusted for the IVS-R1640 session:

- PARA.MIN_SRCRP (time in-between scans of the same source) → set to 20 min
- PARA.MAXSLEWTIME (maximum slew time which is allowed per station) → set to 300 sec
- PARA.MAX_SCAN (maximal allowable scan time) → set to 300 sec
- PARA.MIN_SCAN (minimal allowable scan time) → set to 20 sec
- PARA.FILLINMODE (subnetting of stations which are not participating in a scan) → set to 12

Run the scheduling:

To run the scheduling go to Run/Run options



- select "Run vie_sched"
- (you also have to deselect "Run vie_init", "Run vie_mod" and "Run vie_lsm")
- Press "Save + Run"

Inspect schedule:

The schedule files are saved at DATA/SCHED/year/your_sub-direcorty

Four files are created:

- 14JUN17.skd → this is the SKD file which is used at the station to control the session
- 14JUN17.vex → this is the VEX file which is a more recent schedule format
- 14JUN17-skdsun.txt → has some statistics about the schedule in it
- 14JUN17VA_V001 → this is an empty (no measurements) NGS file which can be used for simulation studies