

# Simulating VLBI observations with VieVS

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## 1 Description

This exercise will give a short introduction to the possibilities of simulating VLBI observations using the Vienna VLBI and Satellite Software (VieVS).

We will simulate our previously created schedules and look at the expected baseline length repeatability.

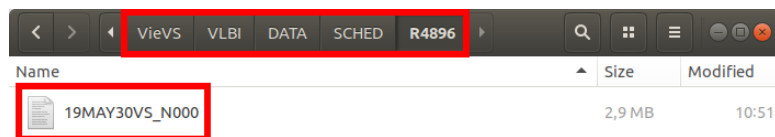
## 2 Starting VieVS

- start MATLAB
- browse to your VieVS folder *\*/VieVS/VLBI/WORK*
- type *views* in the matlab command window

now VieVS should open

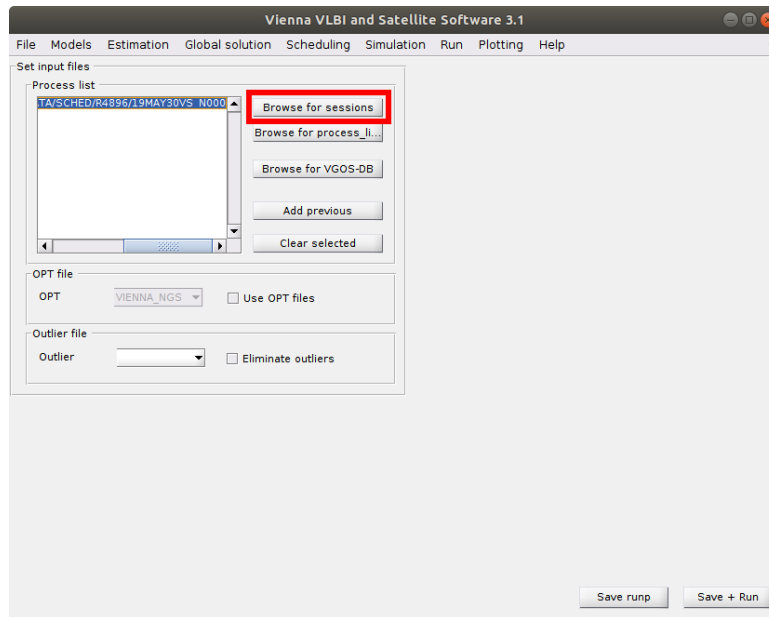
## 3 Preperation

Copy the previously created schedule NGS file to VieVS



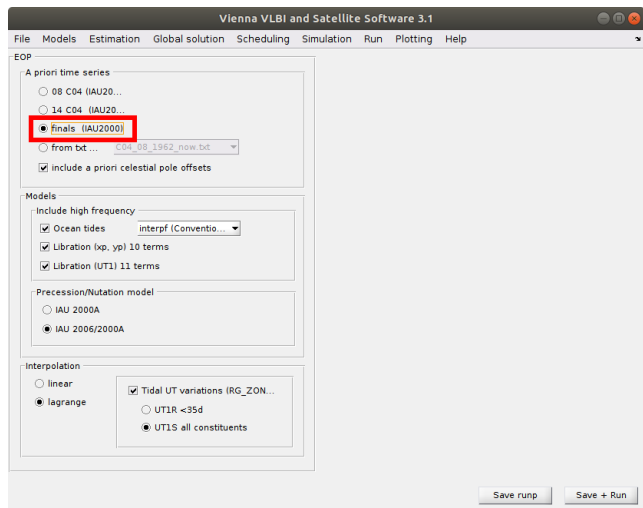
## 4 Select input files

Select the input NGS file in *File/Set input files*. We want to simulate our previously created VLBI schedule. Click *Browse for session* and select the NGS file in *DATA/SCHEM/\*your\_folder\*/\*your\_file\** (NOTE: you need to browse one folder back after you clicked *Browse for session*).



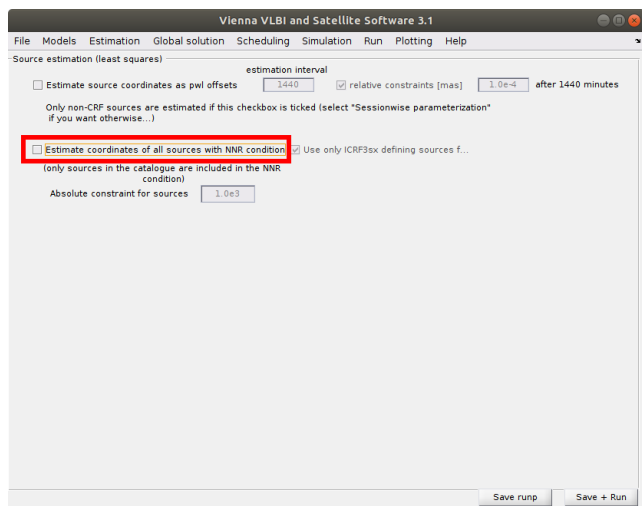
## 5 Models

Because we want to simulate a schedule for tomorrow we need to select an EOP time series with predictions. Browse to *Models/EOP* and select *finals* (IAU2000) as your a priori time series.



## 6 Estimates

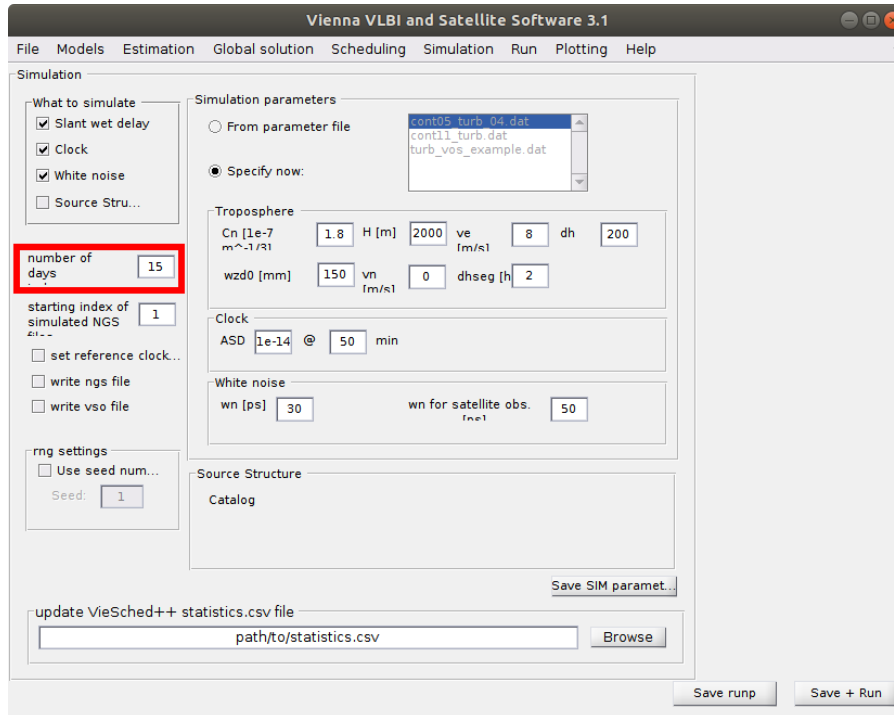
For this session, we do not want to estimate source positions. Go to *Estimation/Least squares/Source coordinates* and deselect "Estimate coordinates of all sources with NNR condition".



## 7 Simulation parameters

Next, browse to *Simulation/Parameters*. We want to use the same parameters for all stations. Therefore select *specify now*:. If you want to use different parameters for each station use the option *From parameter file*: and make sure you have a file stored in *VieVS/DATA/TURB*.

Change the *number of days to be simulated* to 15 to simulate 15 versions of the same schedule.



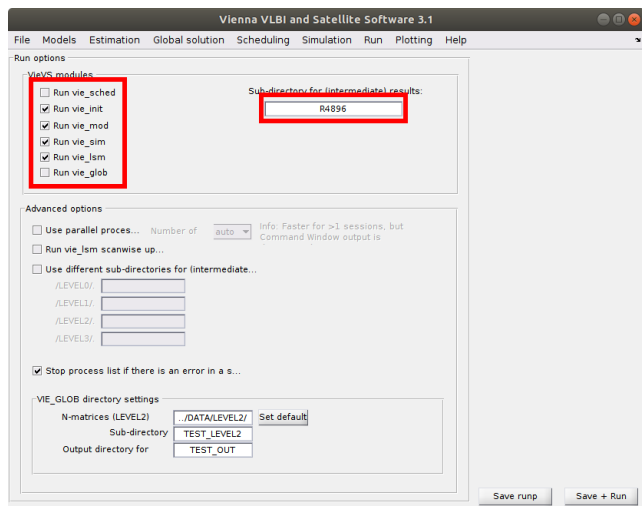
## 8 Run

Finally, go to the panel *Run/Run options* and select the following VieVS modules:

- VIE\_INIT
- VIE\_MOD
- VIE\_SIM
- VIE\_LMS

Also choose a new sub-directory name for (intermediate) results like *R4859\_sim* and press *Save + Run*.

If everything worked, you could also do the same for a different schedule. Simply select a other NGS file in *File/Set input file* and choose another sub-directory name in *Run/Run options* and press *Save + Run*.



## 9 Results

If everything worked you can look at the baseline length repeatability of your simulated scheduling versions. Go to the *Plotting/Session analysis* panel and load your first folder by pressing the *Load* button at the *Folders/Session (black)* panel.

Plot the baseline length repeatability by pressing the *basel. len. rep.* radiobutton.

Afterwards you can load additional folder by pressing the *Load* button at the *(red, triangle)* panel and check the *Add network/BLR* checkbox.

