一、Software download

https://github.com/yaodang/GASV

二、Environment setup

- **Anaconda install**

  https://www.anaconda.com/download/

- **Anaconda create environment**

  conda create –name myenv python=3.8

  Where 'myenv' represents the environment name (user-defined), and 'python=3.8' specifies the Python version.

  conda activate myenv

  enter to 'myenv' environment；

  conda deactivate

  exit current environment

  conda env list

  list all environment

  conda remove –name myenv –all

  delete 'myenv' environment

- **Install required packages**

  First, enter to 'myenv' environment, then:

  conda install numpy

  conda install matplotlib

  conda install scipy

  conda install -c conda-forge netcdf4

  conda install pip

  pip install jplephem

- **other required packages**

  If work in windows system, and don’t have the Fortran compiler, you can in 'myenv' environment, install one, like:

  conda install m2w64-gcc-fortran

  then you can compile the Fortran like in Linux, for example:

  gfortran -shared -o libgmf.dll GMF.F

- Run

  cd to software path, and in terminal enter：

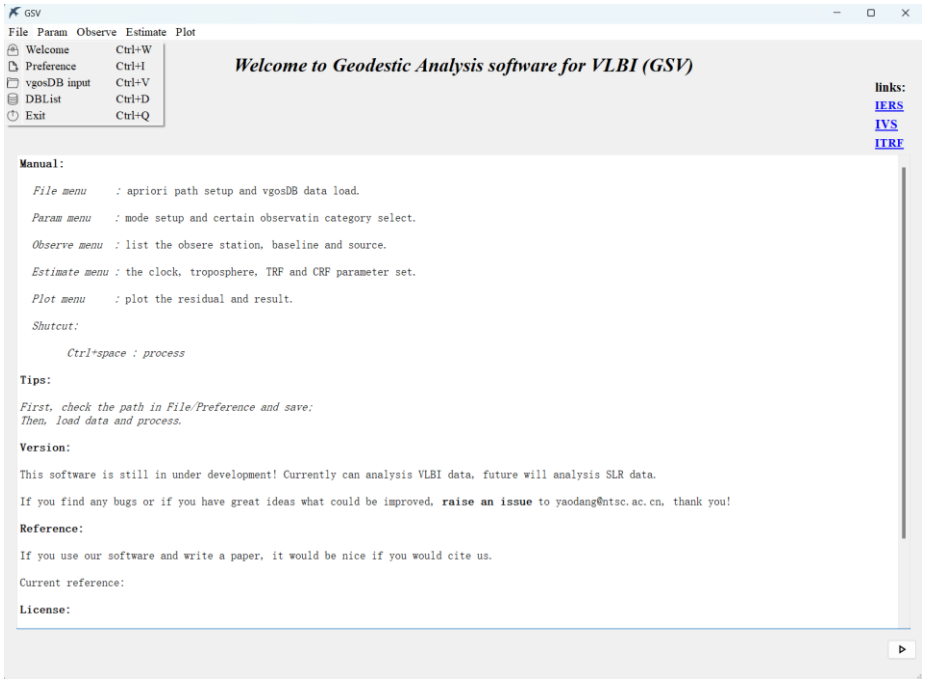
  python GASV_GUI.py (GUI mode) or

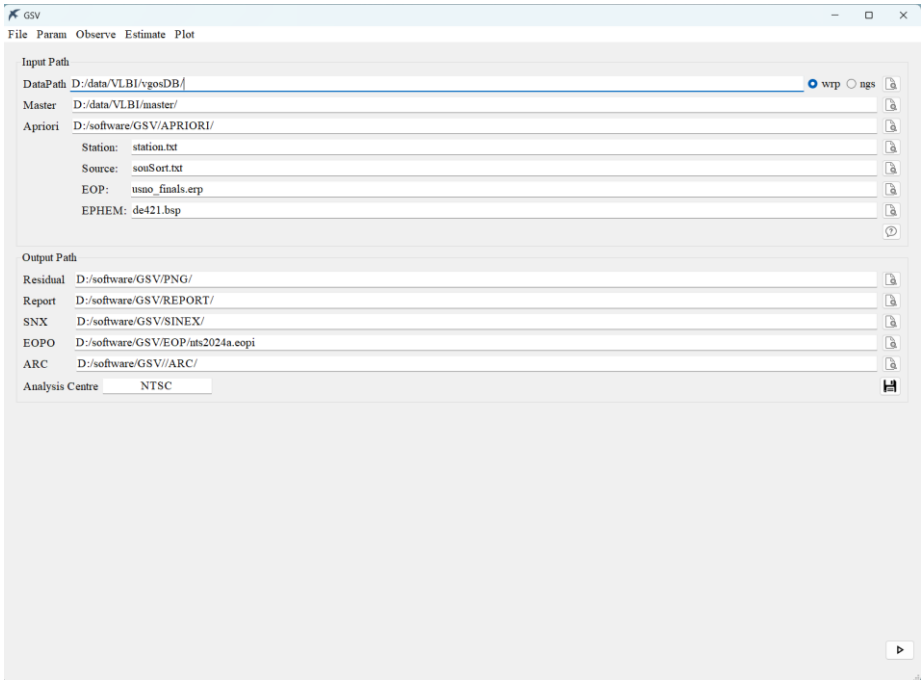
  python run.py /path/to/control_file (pipeline mode)

三、**Initial Configuration**

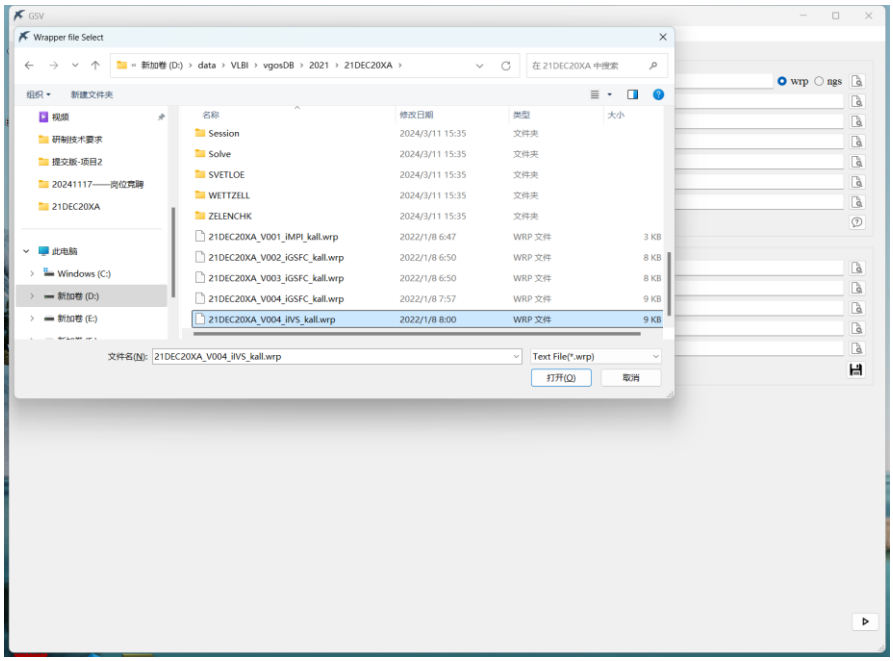
3.1 GUI mode

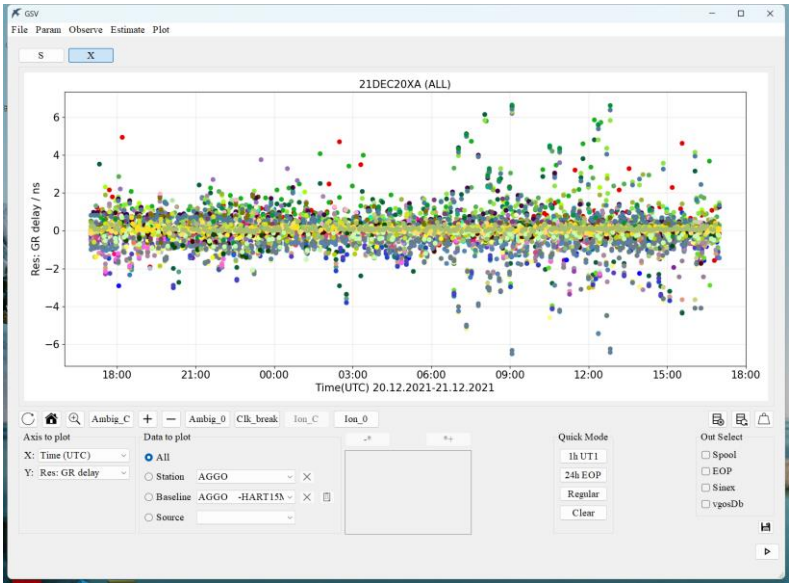
Clicked File->Preference, set the path and click save button。





Clicked File->vgosDB_input to load data, and clicked bottom-right button to process data.





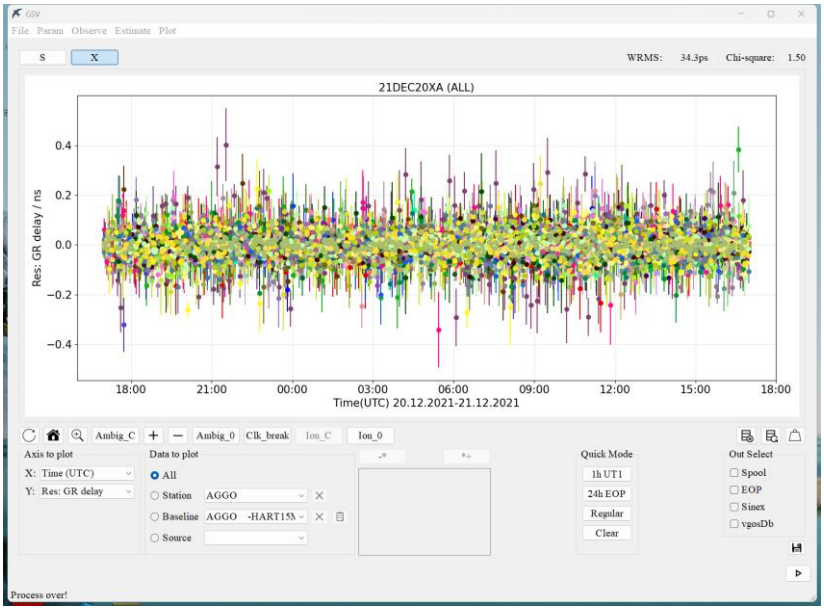
After processing, you can:

1. **View residuals** by clicking **Plot ->Residual** in the menu bar.
2. **Set up EOP estimation automatically** by clicking the **"24h EOP"** button in the *Quick Mode* section.
3. **Reprocess** by clicking bottom-right button.

   Note: This process may take some time to complete.

Save:

Check the 'Sinex' option and click 'Save'. The SINEX file will be stored in the directory specified in the Preference settings.



3.2 pipeline mode

Firstly, modify the control file, which is same to the control file of Calc/Solve:

```
$SETUP
* INDEPENT or GLOB
 SOLUTION              INDEPENT
 QUALCODE_LIMIT        5
 CALTHEORE             IN
 WEIGHT                NO
* VGOSDB                /data/VLBI/AIPS/2025/
* VGOSDB                /data/VLBI/NGS/2024/
 VGOSDB                E:/123/GASV_pyqt/data/VLBI/vgosDB/
$FLAGS
 CLOCKS                60
 ATMOSPHERES           30
 GRADIENTS             YES 3
 BL_CLOCK              IN
 UT1/PM                POLY OFFSET YY RATE YY MIDDEL
* UT1/PM                SEGMENT INTERVAL 60 PM_RATE_CONSTR 5 UT1_RATE_CONSTR 1
 NUTATION              XY_OFFSET
 SOURCES               NO
 STATIONS              YES
 VELOCITIES            NO
$DATA
 SOURCE                YES  EXCEPT 0036-216 0336-017 0428+205 0806-710 1245-197 \
      1328+254 1855+031 2044-168          2322-411          3233-528 3251-151 \
      0252-712 0842-754                                                       \
      0218+35A 0218+35B 0218+357 \
      1422+231                   \
               1830-21B 1830-211 \
      HD32918  HD132742  SIGCRB  HR1099  UXARI  LSI61303                    \
      UG00192  NGC0253  0131-450 0131-367 0201-440 UGC01651 M77      NGC1167   \
      0340+044 0420-625 0515-674 0512+249 0537-692          0558-504 0611+139   \
```

Then using following command to process data:

python run.py /path/to/control_file