Obs-Visible Manual

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This APP is developed to exteact the Pseudorange, Carrier Phase observation, Doppler measurement and Carrier-to-noise ratio C/N_0 in RINEX observation files, and plot them on the graph.

1. Interface and Introduction

In data extraction part, you have to choose a folder where the observation files are located in. **Since the function for reordering data by epoch time has only been partially developed, please rename the files so that they are arranged in chronological order. This will ensure that the extracted data is in the correct time sequence.**

Then you need to choose the corresponding RINEX version of the observation files.(Although it can be read from the file header through program, it is decided to have the user enter it manually for certain reason.)

Push the button "Extract" to start data extracting, “extraction finished” will be shown in Message when the extraction is finished.

If you want to Save the extracted data, just push the "Save" button, if you want to see the details of the data, open it in MATLAB.

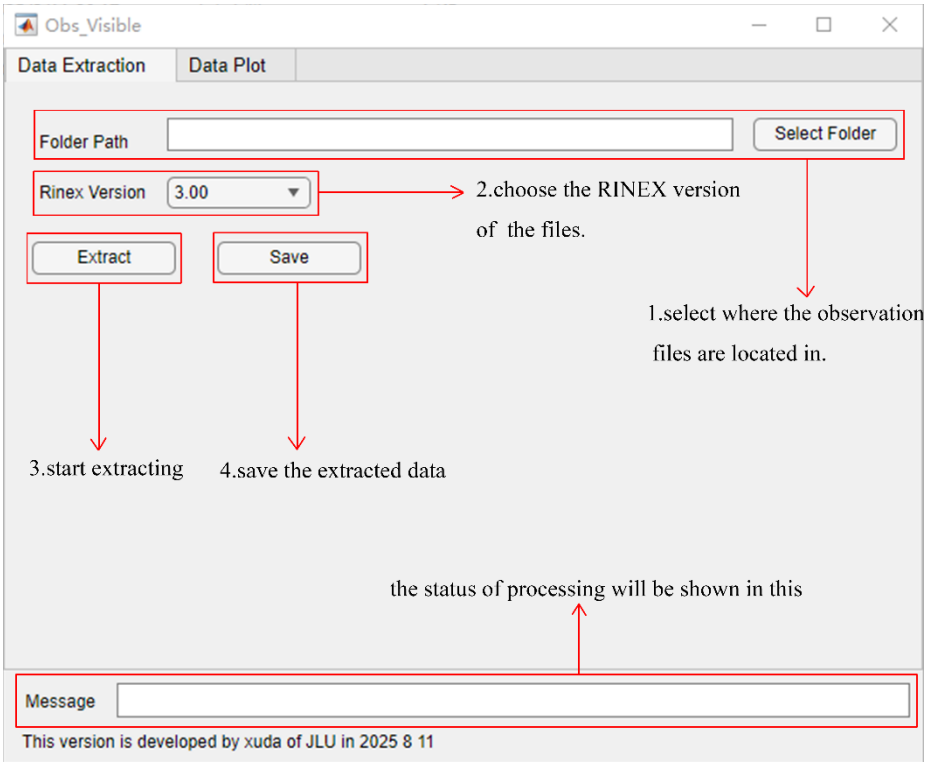

Fig. 1 Data Extraction

In the data plotting section, click the "Select File" button to choose a data file generated and saved during the data extraction process. If you already know the file path, you can enter it directly into the "File Path" field. Then click "Load" to load the selected data. If the data format is incorrect, an alert will appear in the Message area. Next, select the observation type you wish to plot, for specific meaning of observation types, see Table 1.

To plot all data from a single system, choose the system and click "Plot1", for specific meaning of satellite system, see Table 2.

To plot data for a single satellite, enter the PRN of the target satellite (only one satellite) and click "Plot2".

To plot data for specific signals, enter the signal types separated by spaces. The signal type names follow the format "system+frequency+code". For example, "G1C" refers to the GPS L1 frequency with the C/A code.For more details, please refer to the RINEX specification document.

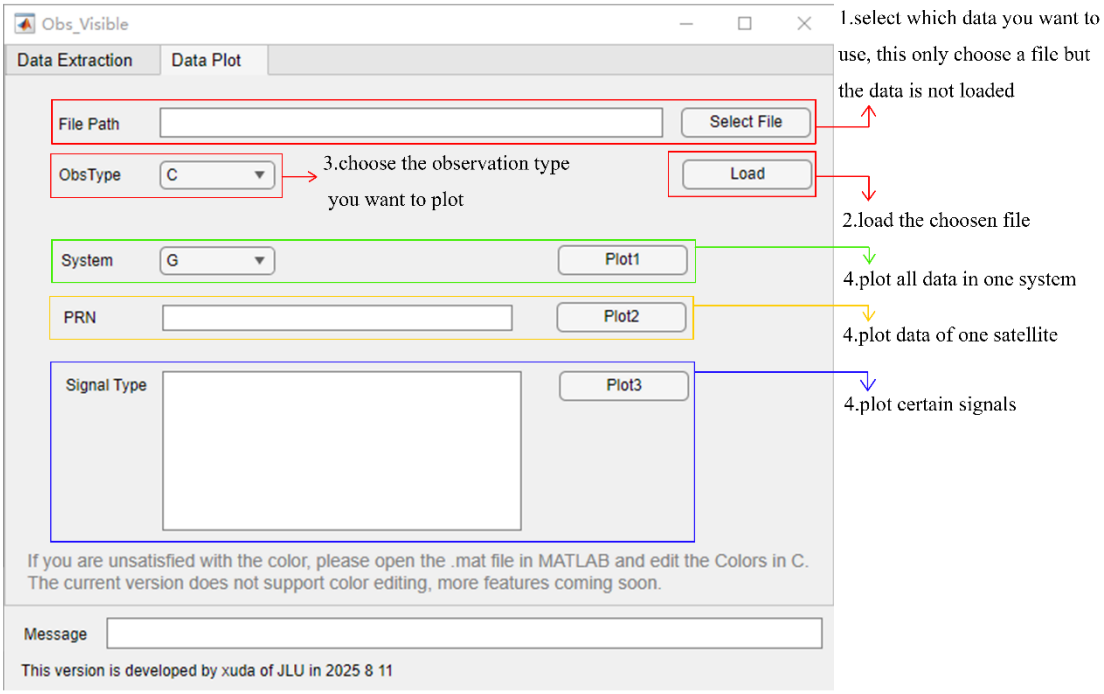

Fig. 2 Data Plotting.

Table 1 Specific meaning of observation types.

Name	Meaning
C	Pseudorange
L	Carrier phase observation
D	Doppler measurement
S	Signal strength (SNR, C/N_0)

Table 2 Specific meaning of navigation satellite systems.

Name	Meaning
G	GPS
R	GLONASS
E	Galileo
C	BeiDou
J	QZSS
I	IRNSS

2. Supported RINEX Version

3.00, 3.01, 3.02, 3.03, 3.04, 3.05, 4.00, 4.01, 4.02

3. Result Examples

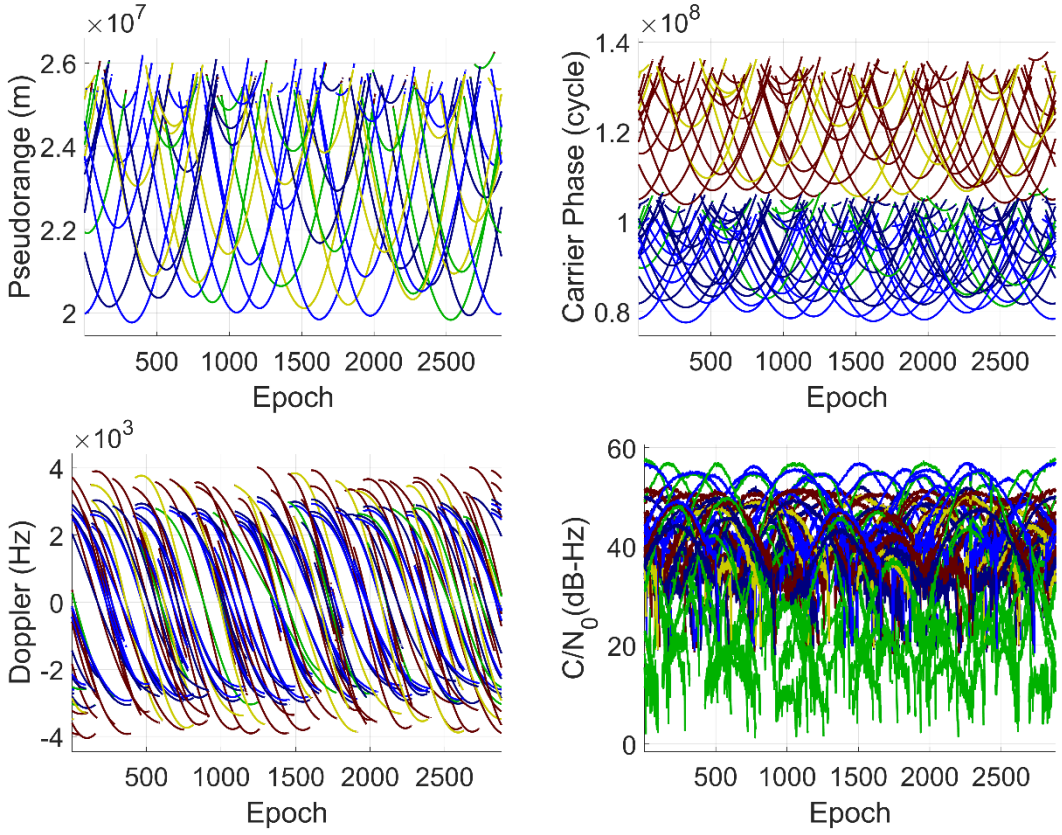

Fig. 3 Observations of GPS