

Utility programs and scripts

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http://web.mit.edu/mfloyd/www/courses/gg/201705_Bristol/

Outline

- Organizing/pre-processing
- Part of sh_gamit
- Evaluating results
- Visualization

Guide to scripts

- There are many scripts in the `~/gg/com` directory and you should with time look at all these scripts because they often contain useful guides as to how to do certain tasks.
 - Look at the programs used in the scripts because these show you the sequences and inputs needed for different tasks
 - Scripting methods are useful when you want to automate tasks or allow easy re-generation of results.
 - Look for templates that show how different tasks can be accomplished.
- `~/gg/kf/utils` and `~/gg/gamit/utils` contain programs invoked by the scripts in `/com` or run directly from a command-line.
- Both the shell-scripts and the utility programs are self-documenting, invoked by typing the name without any arguments.

GAMIT/GLOBK utilities

Organizing/Pre-processing

sh_get_times: List start/stop times for all RINEX files

sh_upd_stnfo: Add entries to station.info from RINEX headers

doy: Convert to/from DOY, YYYYMMDD, JD, MJD, GPSW

convertc: Transform coordinates (cartesian/geodetic/spherical)

glist: List sites for h-files in gdl; check coordinates, models

cortran/convertc: Translate coordinate types and file formats

corcom: Rotate an apr file to a different plate frame

unify_apr: Set equal velocities/coordinates for *glorg* equates

glist2cmd: Create a use_site list from a glist file

vel2stab: Create a stab_site list from a velocity org file

sh_dos2unix: Remove the extra CR from each line of a file

GAMIT/GLOBK Utilities (cont)

Scripts used by sh_gamit but useful stand-alone

sh_get_rinex: ftp a RINEX o file from remote archives (ftp_info)

sh_crx2rnx: convert to/from RINEX/Hatanaka

sh_get_nav: ftp a RINEX n file from remote archives

sh_get_met: ftp a RINEX m file from remote archives

sh_get_hfiles: ftp h-files from MIT/SOPAC

sh_update_eop: ftp an EOP file from IERS, create pmu, ut1., wob.

sh_get_orbits: ftp a g-file or sp3 file from remote archives, call -->

sh_sp3fit: create a g- or t-file from an sp3 file (1-3 days)

GAMIT/GLOBK Utilities (cont)

Evaluating results

sh_oneway: Plot phase residuals (sky map; vs elevation) [GMT]

sh_plotelmean: Elevation angles average residuals plots [GMT]

cvview: Display and manipulate phase residuals [X-windows]

sh_plot_pos: Plot coordinate times series [GMT]

sh_tshist: Plot histogram of time-series statistics [GMT]

tsview: Display and manipulate coordinate time series [MATLAB]

sh_plotvel: Plot velocity maps [GMT]

sh_map_elements, sh_map_calif, sh_map_balkans, etc.

velview: Display and manipulate velocity maps [MATLAB]

sh_velhist: Plot histogram of velocity statistics

sh_org2vel: Extract plate-referenced velocities from glorg print file

tscon: Rotate “.pos”-files into new reference frame rather than rerun glred/glorg

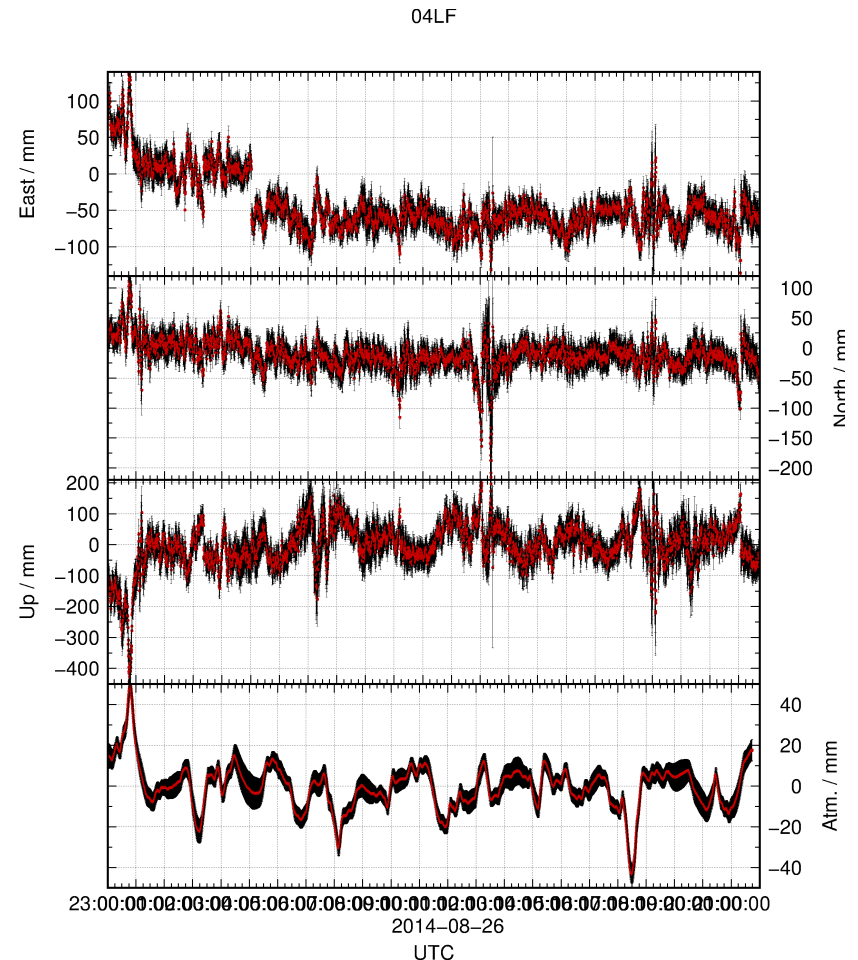
velrot: Combine velocity fields from different analyses

tscon to redefine reference frame

- apr-file for your chosen reference frame may be specified in glorg command file
- But if we want to put time series in different reference frames without rerunning glred, we can use tscon
- tscon works in much the same way as glorg and has a command file that uses a few globk/glorg options
 - tscon will not be able to use the full covariance matrix (with inter-site spatial correlations) that is available to glorg
 - Remember to read in as many pos-files as possible so that as many stabilization sites as possible are available! You cannot rotate only one time series because the (network) stabilization is done in the same way as glorg

sh_plot_track

- Reads track “NEU”, “DHU” or “XYZ” output file
- May add subplot to view evolution of atmospheric delay



sh_kml

- Script for converting several formats of result into KML format for viewing in Google Earth
 - glist (may also be used with time slider)
 - “.org”-file / “.vel”-file
 - track “GEOD”-format output file

