

Utility programs and scripts

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Utility Overview

- In this lecture we look at a number of utility scripts and programs used in the gamit/globk suite of programs.
- We examine and will show examples in the areas of
 - Organization/Pre-processing
 - Scripts used by sh_gamit but useful stand-alone
 - Evaluating results
- Also examine some basic unix, csh, bash programs and method.

GAMIT/GLOBK Utilities

1. Organization/Pre-processing

sh_get_times: List start/stop times for all RINEX files

sh_upd_stnfo: Add entries to station.info from RINEX headers

convertc: Transform coordinates (cartesian/geodetic/spherical)

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

corcom: Rotate an apr file to a different plate frame

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

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

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

GAMIT/GLOBK Utilities (cont)

2. 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 SOPAC/MIT

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)

3. Evaluating results

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

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

sh_plotcrd: 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], call -->

sh_map_elements, sh_map_calif, sh_map_balkans, etc.

velview: Display and manipulate velocity maps [MATLAB]

sh_org2vel: Extract plate-referenced velocities from glorg print file

velrot: Combine velocity fields from different analyses

Unix csh program/commands

- `grep` – used to find content in files. We use it to extract information from files
- `awk` – used to extract column based data from files. `awk` has math, logical and string functions.
- Pipes and re-directs: These methods differ between `csh` and `bash`:
 - `csh`: `>`, `>>` and `>&`, `>>&` to re-direct stdout and stdout+stderr
 - `bash`: `>`, `>>` and `>> file 2>&1` to do the same
- `setenv` and `set` allow variables to be set and differ between `csh` and `bash`
 - `csh`: `set variable = value ; setenv variable value`
 - `bash`: `variable=value ; export variable`
 - In both case `$variable` contains the value

Summary

- We have looked at just some examples of common scripts and program used in gamit/globk
- There are many more scripts to be found in ~/gg/com and programs in ~/gg/gamit/bin and ~/gg/kf/bin
- A good understanding of unix csh or tcsh is very useful. The software will run from a bash shell but all the instructions are for csh