GAGE Facility GNSS Data Archives and Products

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The GAGE Facility GNSS Data Center, operated by UNAVCO Geodetic Data Services (GDS), manages a complex set of data, metadata and data flow operations from sensor to users, providing a wide range of geodetic/geophysical observations to the scientific and educational communities. This include data operations (managing metadata, data downloading, ingestion, and preprocessing); data products and services (generating processed results, and QA/QC); data management and archiving (distribution, curation and attribution-DOIs); and associated cyberinfrastructure.

GAGE Facility GNSS data products include raw receiver files (Level 0), pre-processed GNSS observation data (Level 1, e.g., RINEX files), and post-processed derived solutions (e.g., position solution time series, velocity solutions, tropospheric parameters). GNSS data are acquired from thousands of continuously operating sites from the Network of the Americas (NOTA), operated by UNAVCO, as well as PI networks and episodic "campaign" surveys conducted by the community. NOTA consists of ~1,278 selected stations from pre-existing NSF funded networks including the Plate Boundary Observatory (PBO), Caribbean COCONet network, and Mexican TLALOC network. GDS provides data services for another 1,600+ contributed continuously operating sites from PI and related GNSS networks from around the globe.

GAGE also provides a number of tools and services for discovering and accessing these GNSS data and metadata. A primary priority for GAGE is to provide openly-accessible high quality and trusted data services to the community. UNAVCO is a signatory to the Findable Accessible Interoperable and Reusable (FAIR) initiative. We support the GAGE community's commitment to proper data use ethics and we facilitate the broader use of data Digital Object Identifiers and access through Google and EarthCube. The UNAVCO community was at the forefront of the discussion on the ethical use of data in the publication "Pritchard, M.,S. Owen, S. Anandakrishnan, W. Holt, R. Bennett, P. LaFemina, P. Jansma, I. MacGregor, C. Raymond, S. Schwartz, S. Stein, and M. Miller, 2012, Open access to geophysical data sets requires community responsibility, Eos Trans. AGU, 93(26), 243, https://doi.org/10.1029/2012EO260006."

UNAVCO is a regular member of the World Data System (WDS) and we share their objectives to 1) enable universal and equitable access to quality-assured scientific data, data services, products and information (all community data are openly available unless granted an explicit exemption from NSF), 2) ensure long term data stewardship, and 3) and foster compliance to agreed-upon data standards and conventions.

This presentation includes an overview of the data, operations and community resources available from the GAGE Facility GNSS Data Center.

GAGE Facility
Analysis Center Coordinator
GPS velocity solutions from the
November 2017 snapshot release
(pbo.snaps_nam08.vel)
in a North American fixed
reference frame
(NAM08).

20mm/yr