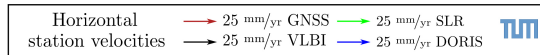
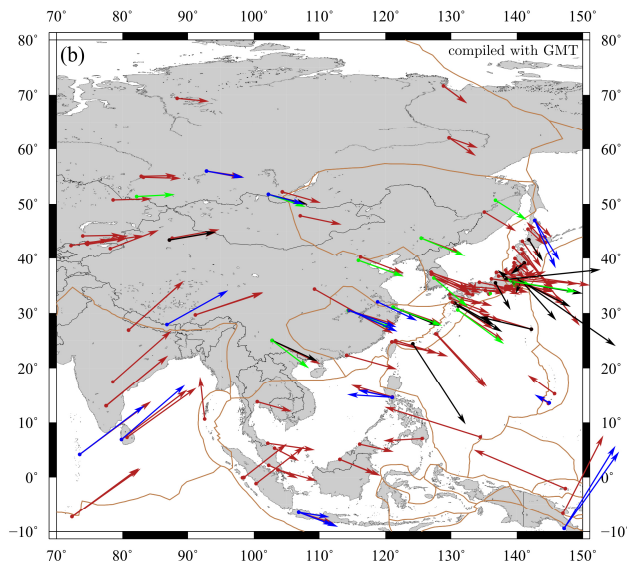
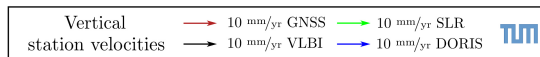
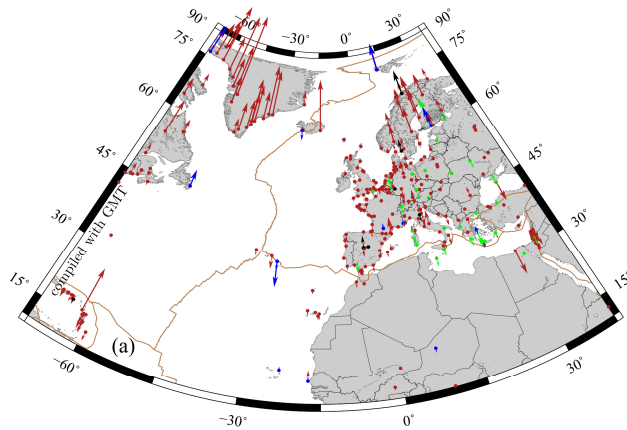


DTRF2014 spotlights



DTRF2014 spotlights: (a) vertical station motions related to postglacial rebound in Greenland and Scandinavia, (b) horizontal station motions in Asia mainly caused by plate tectonics.

ITRS Combination Centre at DGFI-TUM

<http://www.dgfi.tum.de/en/international-services/itrs-combination-centre/>

DTRF2014 data

DTRF2014 data can be accessed via <http://www.dgfi.tum.de/en/science-data-products/dtrf2014/>

Citation:

Seitz M., Bloßfeld M., Angermann D., Schmid R., Gerstl M., Seitz F.: **The new DGFI-TUM realization of the ITRS: DTRF2014 (data)**. Deutsches Geodätisches Forschungsinstitut, Munich, doi:10.1594/PANGAEA.864046, 2016.

The DTRF2014 is the first ITRS realization in which atmospheric and hydrological loading displacements are considered. DGFI-TUM provides the necessary parameters to compute quasi-instantaneous geocentric station positions in addition to the linear station motion model:

- Atmospheric and hydrological loading displacements
- SLR origin model
- Individual technique-specific station motions

Further details and user instructions are provided on the DTRF2014 data web page.

Technische Universität München

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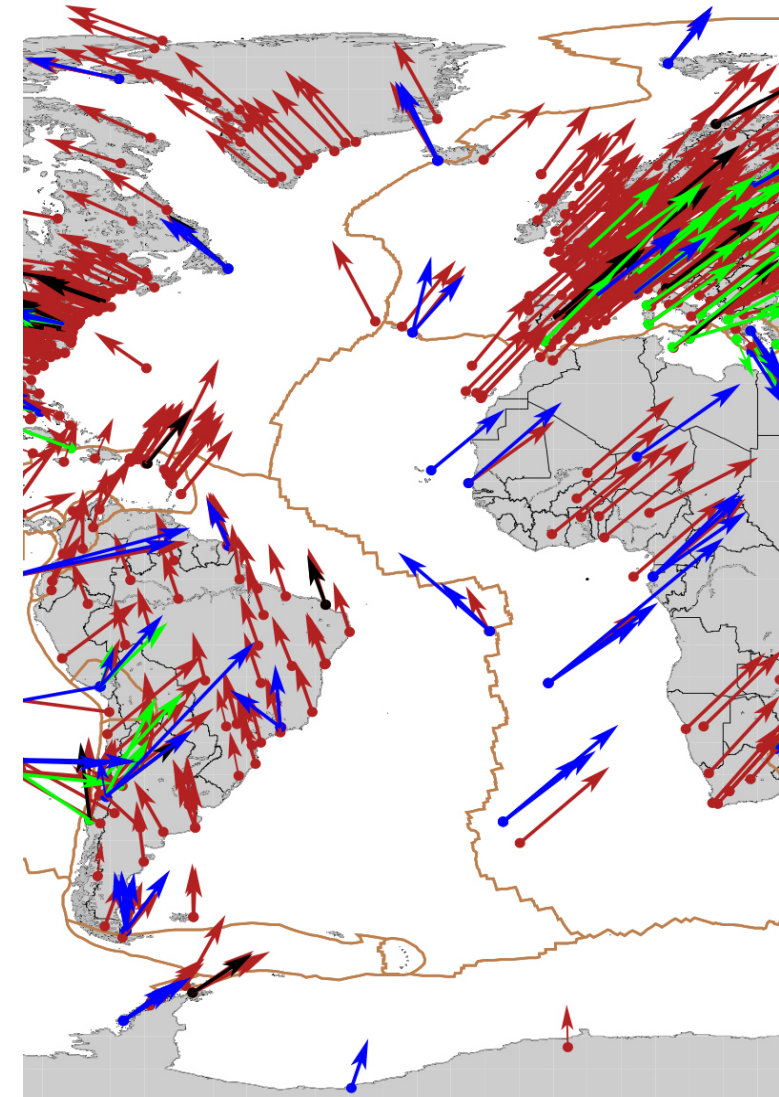
80333 Munich

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DTRF2014

DGFI-TUM's new realization of the International Terrestrial Reference System (ITRS)



DTRF2014

In its role as an *ITRS Combination Centre* of the International Earth Rotation and Reference Systems Service (IERS), DGF-TUM is in charge of computing a solution of the International Terrestrial Reference Frame (ITRF), i.e. the realization of the International Terrestrial Reference System (ITRS) at highest accuracy and long-term stability.

The DTRF2014 is DGF-TUM's most recent ITRF solution. It comprises positions and velocities of more than 1700 globally distributed stations of the space geodetic observation techniques VLBI, SLR, GNSS and DORIS as well as consistently estimated Earth orientation parameters. For the first time, non-tidal atmospheric and hydrological loading is considered in the DTRF2014.

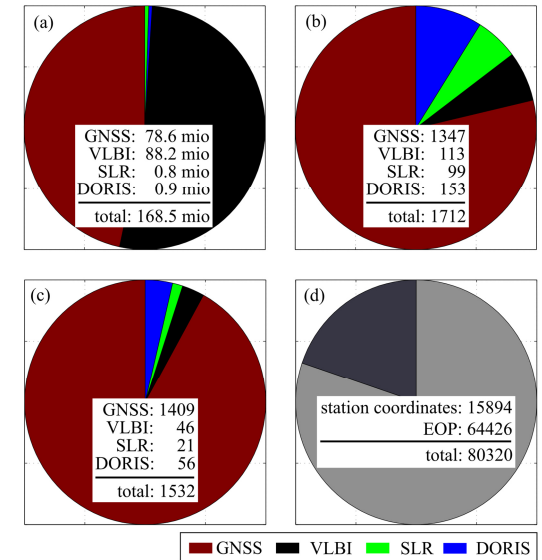
A global geodetic reference frame as a unique basis

An up-to-date ITRS realization is used to refer geodetic parameters to a unique global metrological basis. It is an indispensable requirement for various applications in science and daily life (e.g., for navigation/positioning, for the realization of precise height and time systems, or for the computation of satellite orbits) and the backbone for Earth system research by providing a uniform reference for monitoring processes in the context of global change.

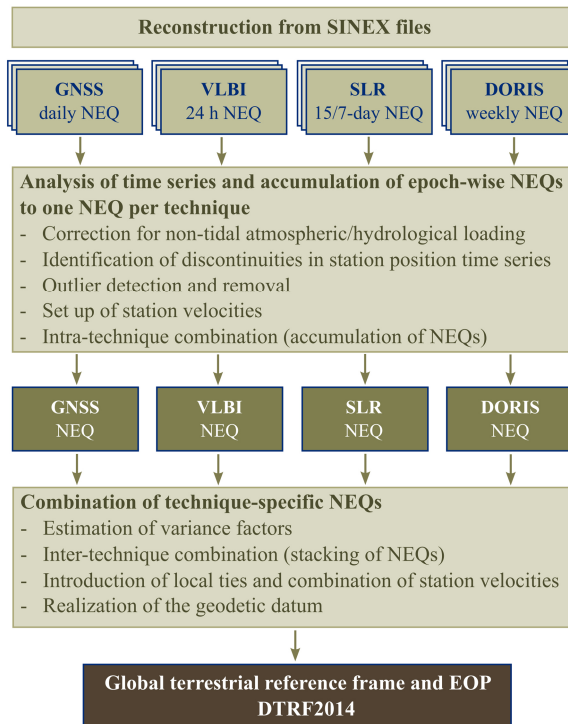
Data

The following data from the four techniques VLBI, SLR, GNSS and DORIS have been combined:

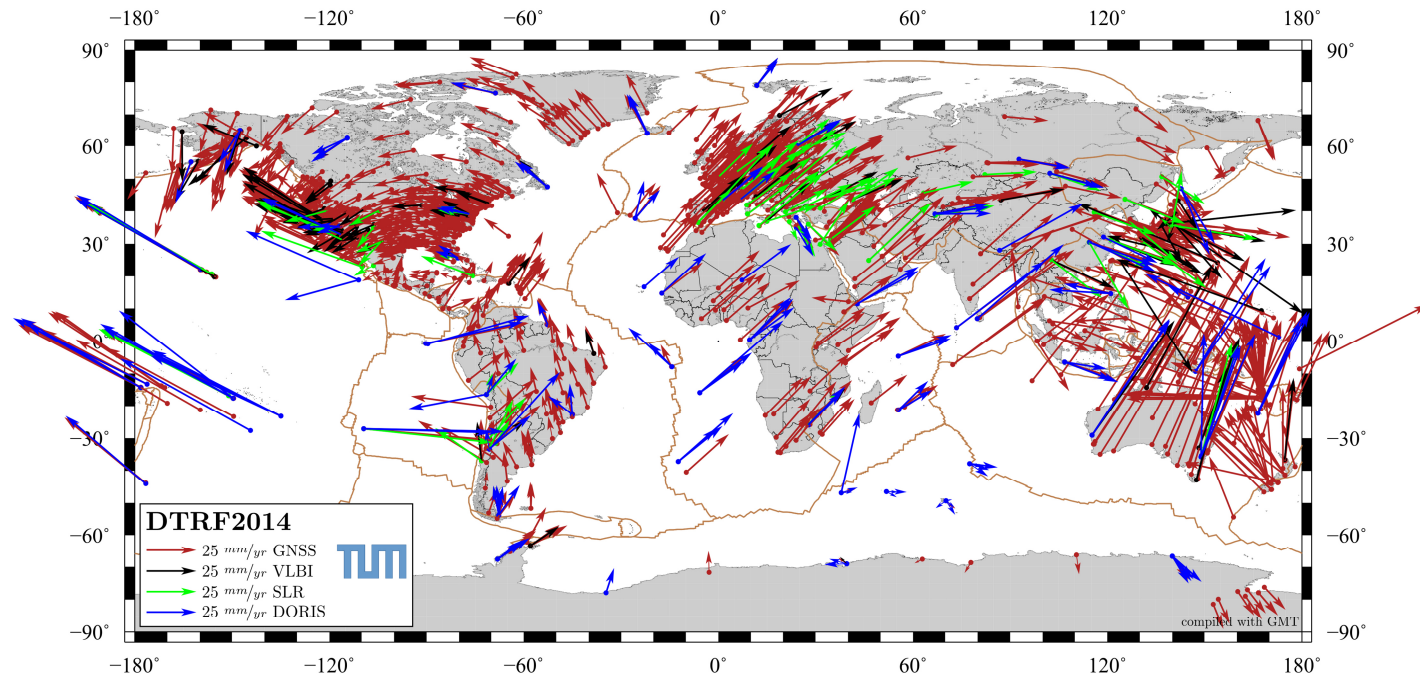
Technique	Service	Resolution	Time span
VLBI	IVS	session-wise	35.3 years
SLR	ILRS	15-day/weekly	32.0 years
GNSS	IGS	daily	21.0 years
DORIS	IDS	weekly	22.0 years



Statistics of the DTRF2014 solution: (a) number of observations, (b) number of sites, (c) number of identified station discontinuities, (d) number of estimated parameters.



Processing strategy for the computation of the DTRF2014 from reconstructed datum-free normal equations (NEQs).



DTRF2014: Positions and horizontal velocities of globally distributed geodetic observing stations.