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The IVS data input to ITRF2014

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Dataset Description

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Related Work

New Version of

Böckmann, S., Artz, T., & Nothnagel, A. (2009). VLBI terrestrial reference frame contributions to ITRF2008. Journal of Geodesy, 84(3), 201–219. doi:10.1007/s00190-009-0357-7

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Behrend, D. (2013). Data Handling within the International VLBI Service. Data Science Journal, 12(0), WDS81–WDS84. doi:10.2481/dsj.wds-011

http://www.iers.org/IERS/EN/Organization/AnalysisCoordinator/SinexFormat/sinex.html

http://www.iers.org/IERS/EN/Publications/TechnicalNotes/tn36.html

Abstract

Very Long Baseline Interferometry (VLBI) is a primary space-geodetic technique for determining precise coordinates on the Earth, for monitoring the variable Earth rotation and orientation with highest precision, and for deriving many other parameters of the Earth system. The International VLBI Service for Geodesy and Astrometry (IVS, http://ivscc.gsfc.nasa.gov/) is a service of the International Association of Geodesy (IAG) and the International Astronomical Union (IAU).
The datasets published here are the results of individual Very Long Baseline Interferometry (VLBI) sessions in the form of normal equations in SINEX 2.0 format (http://www.iers.org/IERS/EN/Organization/AnalysisCoordinator/SinexFormat/sinex.html, the SINEX 2.0 description is attached as pdf) provided by IVS as the input for the next release of the International Terrestrial Reference System (ITRF): ITRF2014. This is a new version of the ITRF2008 release (Böckmann et al., 2009).
For each session/ file, the normal equation systems contain elements for the coordinate components of all stations having participated in the respective session as well as for the Earth orientation parameters (x-pole, y-pole, UT1 and its time derivatives plus offset to the IAU2006 precession-nutation components dX, dY (https://www.iau.org/static/resolutions/IAU2006_Resol1.pdf). The terrestrial part is free of datum. The data sets are the result of a weighted combination of the input of several IVS Analysis Centers.
The IVS contribution for ITRF2014 is described in Bachmann et al (2015), Schuh and Behrend (2012) provide a general overview on the VLBI method, details on the internal data handling can be found at Behrend (2013).

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Keywords

Very Long Baseline Interferometry, VLBI, International VLBI Service for Geodesy and Astrometry, IVS, International Terrestrial Reference Frame, ITRF2014, Earth Orientation Parameters, EOP, precession, nutations, Earth rotation, dUT1, length of day, LOD, polar motion, IVS-SINEX-ITRF2014

GCMD Science Keywords

EARTH SCIENCE > SOLID EARTH > GEODETICS
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