3.5.5 ITRS Centre

Report for 2008

This report summarizes the activities of the IERS ITRS Centre during the year 2008.

ITRF2008

The ITRS Centre, together with the ITRS Combination Centres, plans to generate a new ITRF solution (ITRF2008) and has solicited inputs from the IERS Technique Centres (TC) and their related Analysis Centres. The TCshave been requested to provide as long time series as possible and preferably covering the full history of observations of each technique. Indeed, three additional years of data are available since the ITRF2005 generation and reprocessed solutions have been expected to be available since that time which could considerably improve the consistency of the inter-technique combination.

Maintenance of the IERS network

The ITRS centre assigns DOMES numbers to geodetic tracking stations or markers as unambiguous identifications of points in space, independently from the technique of their tracking instruments.

The IERS network database, which contains the descriptions of the sites and points, is continuously updated as DOMES numbers are assigned. DOMES number request form can be found on the ITRF web site <http://itrf.ign.fr>, and should be sent to domes@ign.fr. An updated list of all available DOMES number is available at <http://itrf.ign.fr/doc_ITRF/iers_sta_list.txt>.

ITRF web site

The ITRF web site, available at <http://itrf.ign.fr>, provides an interface to consult the IERS network database. Site and point information can be requested on line; it contains approximate coordinates of the sites, the list of their points as well as their descriptions, their DOMES numbers and the list of ITRF versions in which they have been computed. Subsets of points can be selected and their ITRF coordinates can be requested at any time in any ITRF version if their coordinates are provided in the requested ITRF version.

The maps of the ITRF networks can be displayed depending of the measurement techniques and of the ITRF realization. Velocity vectors can be displayed as well as tectonic plates. The dynamical map can help users to familiarize with ITRF products and can be used for educational purpose. It can also be an interesting tool to select IERS sub-network depending on the measurement techniques, co-located hosted instruments or ITRF versions. ITRF94, ITRF96, ITRF97, ITRF2000 and ITRF2005 solutions are available for download.

Local ties of ITRF co-location sites

In order to improve the available local tie vectors, the ITRS product centre undertakes regularly the survey of some ITRF co-location sites in addition to every new DORIS co-located antennae that are installed. After Tahiti Observatory in October 2007, IGN has surveyed Herstmonceux co-location site in June 2008. The reports of these surveys are available at the ITRF web site at <http://itrf.ensg.ign.fr/local_surveys.php>. The local ties SINEX files are also available at that web site.

Report for 2009

This report summarizes the activities of the IERS ITRS Centre during the year 2009.

ITRF2008 preparation

The ITRS Centre collected input time series (weekly from satellite techniques and daily from VLBI) of station positions and daily Earth Orientation Parameters from the IERS Technique Centres (TC) in preparation for the ITRF2008. All the submitted solutions are combined solutions by the Combination Center of each TC and based on reprocessed individual solution generated by the Analysis Centers of each one of the four techniques (VLBI, SLR, GNSS/GPS and DORIS). The submitted solutions cover the full history of observations, except for the GNSS/GPS series which start in 1997. These solutions are archived by the ITRS Center and were analysed by the two IERS Combination Centers (IGN and DGFI). Interaction and communication between the IERS Center and the TCs were operated as necessary and as a function of the ITRF2008 pre-analysis conducted by the IERS CCs. Some IGN ITRF2008 Pre-analysis results are presented in the CC section of this report, see 3.6.1.2. The following table summarizes the final time series of station positions and EOPs submitted by the TCs.

TC	Span	Solution type	EOPs
IVS	1980.0–2009.0	Normal Equation	Full set
ILRS	1983.0–2009.0	Variance-Covariance	Polar Motion, LOD
IGS	1997.0–2099.5	Variance-Covariance	Polar motion, rate, LOD
IDS	1993.0–2009.0	Variance-Covariance	Polar motion, rate, LOD

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ITRF web site

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In preparation for the ITRF2008 combination, the IGN survey department has conducted a re-adjustment of all surveys in DORIS sites co-located with the other 3 techniques. Other few non-DORIS co-located sites for which IGN detains the raw survey data were also adjusted. The local ties generated from this re-adjustment are provided in SINEX format with full variance-covariance information.

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