

# International Centre for Earth Tides (ICET)

<http://www.upf.pf/ICET/>

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## Main Activities

- 1 The new ICET database, presented at the ETS2008 meeting in Vienna, is now on line at <http://maregraph-renater.upf.pf>, or [www.bim-icet.org](http://www.bim-icet.org), or [www.upf.pf/ICET/](http://www.upf.pf/ICET/). The database currently hosts all the validated one-minute GGP data until March 2010 and is able to store any kind of data related to Earth Tides (e.g. tiltmeter or spring gravimeter data). See Annex 2 and Annex 3.
- 2 GGP one-minute filtered and manually validated data are routinely processed at ICET and uploaded to the ICET and GFZ database. We plan to switch to an automated validation as soon as possible, in order to cope with manpower restrictions (see Annex 2 and point 3).
- 3 A new validation software able to automatically validate GGP data has been developed (Annex 5). The purpose of this software is to identify and discard jumps and spikes in the raw data on an automated or nearly automated basis. Based on Wiener-Kolmogorov filtering techniques, it responds to the critics raised during the ETS2008 meeting in Iena, by re-adding the "noise" to the GGP filtered data. We are currently testing this software on several GGP raw files and a workshop about it is planned in August 2011 at National Chiao Tung University (Taiwan, GGP Hsinchu station).
- 4 A Python script able to write strictly normalized headers for GGP files has been completed. This is another key to alleviate the burden of validating and storing GGP data. It is available for download at [www.bim-icet.org](http://www.bim-icet.org) (see Annex 2).
- 5 A new XML format for storing GGP data has been developed. It is a modern format, free of the limitation of the current GGP "fixed columns" format (see Annex 4). This format also permits to build a native XML database (Sedna) instead of standard relational databases (SQL queries).
- 6 Bulletin International des Marées: 25 scientific papers have been published on BIMs 144, 145 and 146 (one issue per year with ISSN numbers). 23 papers are related to the ETS2008 meeting in Jena. All the BIMs issues are online at: [www.bim-icet.org](http://www.bim-icet.org). See Annex 6.
- 7 The new gPhone gravimeter of the ICET center in operation in Tahiti-Pamatai since March 2008. We routinely monitor all Earthquakes > 6.0 along the Pacific Rim (see Annex 2).
- 8 ICET is also participating in the deployment in French Polynesia of a network of Tide Gauge / GPS stations (POGENET, POLynesian GEodetic NETwork), as a contribution to the IAG Global Geodetic Observing System (GGOS).

## **Annex: Publications / Reports**

### *Oral and Posters Communications directly related to ICET*

Barriot, J.-P., Gabillon, A., Verschelle, Y., Capolsini, P., Ducarme B.: The foreseen SCHEMA of the new ICET database at the Geodesy Observatory of Tahiti. ETS5-P2 (Poster Session) Space Geodetic Techniques /GGOS, New Challenges in Earth Dynamics, Jena, Germany, Sept. 1-5, 2008.

J.-P. Barriot, The International Center for Earth Tides in Tahiti, Geodesy for Planet Earth Meeting (oral), International Association of Geodesy, Buenos Aires, August 31- September 04, 2009.

J.-P. Barriot, L. Sichoix, Y. Verschelle, A. Gabillon, ICET activities at the Geodesy Observatory of Tahiti, Oral Presentation, Second Asia Workshop on Superconducting Gravimetry, Taipei, June 20-22, 2010.

J.-P. Barriot, Y. Verschelle, A. Gabillon, M. Hassanzadeh-Bahabadi, N. Tseng, An XML schema for GGP data archivingPoster, Second Asia Workshop on Superconducting Gravimetry, Taipei, June 20-22, 2010.

J.-P. Barriot, Identification and removing of outliers and jumps in supraconducting gravimeter time series, Oral Presentation, Second Asia Workshop on Superconducting Gravimetry, Taipei, June 20-22, 2010.

J.-P. Barriot et al., ICET Activities at the Geodesy Observatory of Tahiti, JG05 session: Integrated Earth Observing Systems, IUGG Melbourne 2011.

J.-P. Barriot et al., An XML Schema for GGP Data Archiving, JG05 session: Integrated Earth Observing Systems, IUGG Melbourne 2011.

### *Oral and Posters Communications indirectly related to ICET*

J.-P. Barriot, P. Ortéga, A. Fadil, L. Sichoix, D. Reymond, Y. Dupont, P. Mainguy and D. Graffaille, The Polynesian Geodetic Network (POGENET): 2009 milestone (Poster), 2èmes assises de la recherche française dans le Pacifique et 11ème Inter-Congrès des Sciences du Pacifique, March 2nd - 6th 2009, ISBN 978-2-11-098964-2.

L. Sichoix and J.P. Barriot: Regional Tide gauge network report of French Polynesia (South central Pacific Ocean), 11th Global Sea Level Observing System - Group of Experts Meeting, May 2009, UNESCO Paris.

J.-P. Barriot, The Geodesy Observatory of Tahiti as a GGOS Observatory. Geodesy for Planet Earth Meeting (oral), Int. Association of Geodesy, Buenos Aires, August 31st -September 04th , 2009.

J.-P. Barriot, L. Sichoix, Y. Vota, L. Mercier and Youri Verschelles, The Geodesy Observatory of Tahiti , Oral Presentation, Observing and Understanding Earth Rotation, A GGOS/IAU Science Workshop, Oct 25-28, 2010, Shanghai.

### *Student reports related to ICET (University of French Polynesia)*

L. Emilion, Identification et suppression des irrégularités sur des mesures de gravité, stage de fin d'étude IPSA, 19 sept. 2008.

Y. Verschelle, Conception et développement d'une base de données marégraphiques et de son interface Web, stage de fin d'étude licence Technicom UPF, juin 2008.