

4.2 IERS Workshop on site co-location surveys

An IERS Workshop devoted to “site co-location survey objectives, methods and issues” took place in Matera, Italy, on October 23-24, 2003.

Presently the quality of the station coordinates results from the various space techniques is in the order of a few millimetres in the horizontal and about 1 cm in the vertical component. Precise local ties are the perfect link to enable a rigorous combination of all space observing techniques by their common parameters in order

- to study the systematics going along with each space technique and,
- to establish a unique, high-precision terrestrial reference frame.

In previous analyses one of the major limiting factors was the characteristic and the availability of accurate local tie information for all the co-located sites around the globe. In 5 sessions attention was given to:

- Co-location sites and their importance for the ITRF
- Site surveys
- Analysis and SINEX
- Reporting and Archiving
- Planning for 2004

More than 30 participants from Australia, South Africa, USA and Europe discussed various examples, analysis methods and survey strategies. Finally guidelines for co-location site surveys and report templates were proposed. The potential availability of survey teams as well as the planning for surveys in 2004 were investigated.

The important recommendations are the following:

- Local ties between co-located instruments should be determined with an accuracy of 1 mm, with full variance/covariance information, available in SINEX format.
- Local survey measurements should have the same importance as and should be treated like any of the space geodetic techniques. Site coordinates (VLBI, GPS, SLR, DORIS) should be better tied to the ground. The local ties quality should be such that they can be assumed true for the combination.
- All GPS sites close to other geodetic techniques should be part of the IGS routine processing.
- A database will be established at IERS (Central Bureau and ITRS Centre) for all information in connection with site co-location (list of co-location sites, local ties in SINEX, co-location instruments, site maps and pictures, survey reports, survey status, site events and history ...).

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To support the local tie activities an IERS Working Group on Local Survey will be suggested for adoption by the IERS Directing Board. The charter of the working group will be the coordination and assistance in local tie analysis as well as SINEX file generation.

The workshop information (programme, presentations and recommendations) is available at the IERS Web page

http://www.iers.org/workshop_2003_matera/

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