

Matera CGS VLBI Analysis Center

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Abstract

This paper reports the VLBI data analysis activities at the Space Geodesy Center (CGS) at Matera from January 2006 through December 2006 and the contributions that the CGS intends to provide for the future as an IVS Data Analysis Center.

1. General Information

The Matera VLBI station became operational at the Space Geodesy Center (CGS) of the Italian Space Agency (ASI) in May 1990. Since then it is active in the framework of the most important international programs. VLBI data analysis activities are performed at CGS for a better understanding of the tectonic motions with specific regards to the European area. The CGS, operated by Telespazio on behalf of ASI, provides full scientific and operational support using the main space geodetic techniques: VLBI, SLR and GPS.

2. Staff at CGS contributing to the IVS Analysis Center

- Dr. Giuseppe Bianco, Responsible for CGS, ASI (primary scientific/technical contact).
- Dr. Cinzia Luceri, Responsible for scientific activities, e-GEOS.
- Dr. Roberto Lanotte, Geodynamics data analyst, Telespazio.

3. Current Status and Activities

3.1. Global VLBI Solution cgs2006a

The main VLBI data analysis activities at the CGS in the year 2006 were directed towards the computation of a global VLBI solution, named cgs2006a, using the CALC/SOLVE software (developed at the GSFC). The cgs2006a is available on the IVS products ftp sites and its main characteristics are:

- Data span:
1979.08.03 - 2006.07.27 (3213 sessions)
- Estimated Parameters:
 - Celestial Frame:
right ascension and declination as global parameters for 625 sources and as local parameters for 1854 sources.
 - Terrestrial Frame:
Coordinates and velocities for 83 stations as global parameters and as local parameters for 29 stations.
 - Earth Orientation:
Unconstrained X pole, Y pole, UT1, Xp rate, Yp rate, UT1 rate, dpsi and deps.

3.2. IVS Tropospheric Products

Regular submission of tropospheric parameters (wet and total zenith path delays, east and north horizontal gradients) for all VLBI stations observing in the IVS R1 and R4 sessions was continued during 2006. At present 387 sessions have been analysed and submitted covering the period from 2002 to 2006.

3.3. IVS Pilot Project “Time Series of Baseline Lengths”

Regular submission of station coordinate estimates, in SINEX files, was continued during 2006 for the IVS pilot project “Time Series of Baseline Lengths”. Moreover the series has been completed with the sessions prior to 2000 and now it is composed of 3124 sessions, from 1979 to 2006. At the present, an analysis of the differences between the CGS series and those provided by other analysis centers participating in this project is under investigation.

4. Future Plans

- Continue and improve the realization of global VLBI analysis.
- Continue to participate in IVS analysis projects.