

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 2007 through December 2007 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 has been 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 asi2007a

The main VLBI data analysis activities at the CGS in the year 2007 were directed towards the realization of a global VLBI analysis, named asi2007a, using the CALC/SOLVE software (developed at GSFC). The main characteristics of this solution are:

- Data span:
1979.08.03 - 2007.12.27 (3463 sessions)
- Estimated Parameters:
 - Celestial Frame:
right ascension and declination as global parameters for 637 sources
 - Terrestrial Frame:
Coordinates and velocities for 92 stations as global parameters
 - 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 2007. At present 493 sessions have been analyzed and submitted covering the period from 2002 to 2007. The results are available on the IVS products ftp sites.

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

Regular submission of station coordinate estimates, in SINEX files, was continued during 2007 for the IVS pilot project “Time Series of Baseline Lengths”. The series is composed of 3167 sessions, from 1979 to 2007. At the present, an analysis of the differences between the CGS series and those provided by the analysis centers participating in this project is under investigation.

4. Future Plans

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