Geophysical Research Abstracts, Vol. 9, 01931, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-01931

Calculation and adjustment method of the RAP network to refer it to ITRF frame and quality checking of the coordenates obtained

M. Berrocoso (1), R.Páez (1), A.Fernández-Ros (1), A.Sánchez-Alzola (1), A.Pérez-Peña (1), J. Gárate (2).

(1) Laboratorio de Astronomía, Geodesia y Cartografía, University of Cádiz, Spain, (2) Real Instituto y Observatorio de la Armada, San Fernando, Spain. (geodesia@uca.es / phone: +34-956016287)

The permanent observation of satellites of different GNSS systems has meant, for the last decade, an important step in applications to Geodesy and Geodynamic. At present there are many permanent stations integrated in different national and international geodetic networks. The GPS permanent stations provide geodetic data with guarantees enough to a correct use, usually in post-processing, scientific and technologic applications. In Spain there are more than a hundred of permanent stations installed and managed by different state and private institutions that provide differential corrections to real-time positioning, besides the usual GPS observations.

The Work and Transport Council of the Government of Andalusia by means of the Andalusian Cartographic Institute is setting a positioning geodetic network named Andalusian Position Network (RAP) where the Astronomy, Geodesy and Cartography Laboratory (LAGC) of the University of Cadiz is responsible for the design, development, quality checking and geodetic maintenance. The main objective of the RAP network is providing GPS data in RINEX format for static position in post-processing, as much as real-time differential corrections (RTK or DGPS) broadcasted from the stations. There are different ways to access to the data and depending on its use and purpose, different precision in the final position will be obtained.

The RAP network is formed by 22 permanent stations distributed homogeneously as to solve the position problem along Andalusia, including the coast strip. The network is referred to ITRF reference frame and it will become the geodetic reference frame

to scientific and technologic applications, such as the geodynamic control of Andalusia; precise geoid determination, to obtain tropospheric and ionospheric models and regional climatological studies; to settle photogrammetric points or marks for the georeference of satellite images; to establish control points for reference networks in big civil works, for GIS applications, and for the terrestrial, maritime and air navigation etc.

In this paper we present the proceedings carried out to design and set of the network; to the organization and quality checking of data and the stations. Finally we explain the methodology established to calculate and adjust the RAP network.