Geophysical Research Abstracts
Vol. 12, EGU2010-8048-1, 2010
EGU General Assembly 2010

Study of the azimuthal heterogeneity of tropospheric delays by GPS precise-point-positioning

Laurent MOREL (1), Francois FUND (2), and Johannes BOEHM (3)

(1) L2G, ESGT, Le Mans, France (laurent.morel@esgt.cnam.fr, 00 33 2 43 43 3 1 02), (2) CNES, Toulouse, France, (3) TU WIEN, Wien, Osterreich

In recent years it has been shown that models for the tropospheric delays based on data from numerical weather models improve the accuracy of station coordinates derived from GPS analysis on a global as well as a regional (e.g. European) scale. However, there is no recommendation in terms of azimuthal asymmetries, i.e., as far as tropospheric (hydrostatic and wet) gradients are concerned. This work will investigate the non-homogeneous behaviour in azimuth for slant tropospheric delays in order to enhance the gradient models in GPS processing, in particular for the west of France.
This is a region where GPS measurements are under influence of maritime meteorology. Satellites can be located above the Atlantic Ocean as well as above the European continent. Meteorological conditions affecting these areas are different; thus, the work deals with impact of satellites choices on tropospheric delays and station coordinates. The GIPSY software will be used to treat observations with the precise-point-positioning (PPP) procedure and the GAMIT software will be applied in a classical way for comparison. The final goal and perspective is to assess current methods and to eventually propose a new tropospheric model to better take into account the azimuthal tropospheric heterogeneity.