Geophysical Research Abstracts
Vol. 17, EGU2015-5948, 2015
EGU General Assembly 2015

May tropospheric noise in satellite radar data affect decision making results?

Aristeidis Bloutsos, Eleni Bekri, Fanis Moschas, Vasso Saltogianni, Stathis Stiros, and Panayotis Yannopoulos
University of Patras, School of Engineering, Department of Civil Engineering, Patras, Greece (p.c.yannopoulos@upatras.gr)

Meteorological and air pollution conditions affect the satellite positioning signals. To investigate the uncertainty introduced in these signals in various meteorological and air pollution conditions, an array of GPS/GNSS stations and another of meteorological and air pollution stations has been established. The study area is expanded next to Patraikos and Corinth Gulf (NW Peloponnisos, Greece), which is characterized by high variability sequences from hot to cold weather, low to high relative humidity and clear to cloudy or/and Sahara dusty atmosphere, as a result of the particular geographical and topographical features of the study area.
The GNSS recordings from several stations with very high vertical separation (with altitude up to 1600m and with a gradient of up to 20%) are analyzed in order to control in some extend both the vertical and the horizontal variability of the atmospheric effects, as well as the noise of geodetic recordings. Then, the GPS results will be combined with meteorological and atmospheric pollution data, as well as satellite radar data, in order to evaluate the enhanced troposphere noise in satellite radar and to estimate the magnitude of uncertainty that may cause alterations to decision making results in the management of water and other natural resources.
This project takes advantage of GPS stations established in wider study area in the framework of the Corinth Rift Laboratory (http://crlab.eu/) in conjunction to the air pollution and meteorological monitoring stations of the Environmental Engineering Laboratory of the Department of Civil Engineering of the University of Patras. Regarding GPS stations, the project has been partly funded by the PLATO Project of the Greek Secretariat for Research and Technology.