



In-situ meteorological data interpolation and homogenization procedure for NRT GNSS tomography

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ASG-EUPOS, a part of EUPOS GNSS network covers whole area of Poland with the average distance of 70 km between stations. From the total amount of ASG-EUPOS stations only 17 are equipped with the meteorological sensors registering the temperature, air pressure and relative humidity. The GNSS troposphere tomography and its derivatives - the water vapour partial pressure, spatial distribution of temperature and air pressure will be the base of the troposphere monitoring system. Such tomography modelling requires the contribution of meteorological data. Because of discreteness of the GNSS and meteorological measurements there is a need to homogenize the troposphere parameters coming from different sources as well as interpolate them to the user-specific locations. The first aim of this paper is to present the data feeding scheme including types of meteorological observations available within the territory of Poland, the infrastructure of sensors and their location, the software developed for data management, data gathering intervals and specifications of data streams. Second aim covers the description of the data homogenization procedure, discussion of interpolation methods and the inner validation of results (observed values minus computed) as well as the external validation of results using the external sensors.