



On the quality of EPN and ASG-EUPOS time series

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The Centre of Applied Geomatics as the one of 18 EPN (EUREF Permanent Network) Local Analysis Centres processes data from the network consisting of 114 sites evenly distributed among the Europe. It provides coordinates with full matrices in SINEX files and troposphere parameters on weekly basis. They are being used to construct the reference frame. Helmert parameters indicate the coherence between reference solution and each of weekly solutions. Daily EPN solutions were determined in the frame of EPN Reprocessing project. Apart from that, data gathered by all ASG-EUPOS (Polish Active Geodetic Network consisting of more than 130 sites) is being processed using the same strategy, which is applied by the EPN community. As the result daily and weekly time series of coordinates are determined. Basing on the weekly solutions cumulative coordinates and velocities are calculated. Their characteristic is very important in the context of the reliability estimation since many potential ambiguities in GPS system exist. The basic parameters which were determined were skewness and kurtosis. Skewness is a measure of the lack of symmetry of probability distribution. Negative values for the skewness indicate data that are skewed left and positive values indicate data that are skewed right, the skewness for a normal distribution is zero. Kurtosis is a measure of whether the data are peaked or flat relative to the normal distribution. High kurtosis means that the peak near the mean is distinct, and probability distribution decline rather rapidly. Low kurtosis means that the peak near the mean is rather flat than sharp and the probability distribution tends to be more uniform than normal. The presentation will deal with the analysis on the topocentric coordinates (North-East and Up separately) of the chosen EPN and ASG-EUPOS sites aimed at quality and reliability investigation.