

Analysis of the Effect of Data Intervals on GNSS Processing

Mustafa Qasim (Iraq) and Ekrem Tusat (Turkey)

Key words: GNSS/GPS; Young surveyor; Gns, Gps, Glonass, data interval, baseline processing

SUMMARY

Over the past decades, thousands of scientists and engineers have developed an amazing range of GPS applications providing post-process positioning with accuracy all the way down to the millimeter level. GNSS applications include different GNSS technologies and methods. According to declared GNSS plans; GPS, GLONASS and Galileo systems will be fully compatible and interoperable with each other in the near future. On the other hand, as it is well known in the surveying community, static GNSS observation and post-processing methods are the most basic and accurate GNSS applications. However, work on the effect of data ranges in post-processing is not readily available. The purpose of this paper is to analyze the effect of data intervals on GNSS solutions in static method applications. To achieve this goal, the current status of GNSS post-processing is explained briefly and the results of GNSS post-processing are presented. For this purpose, data from two different GNSS networks were used. One of these networks was established by the project team around Selcuk University as a local network. In addition to this local network, data from the GNSS points used in this study were selected from CORS-TR points as a second network which contains longer baselines. The GNSS data collected in the field and obtained from CORS-TR points were processed by using Leica Geo Office GNSS software. In the processing of different satellite systems (GPS-only, GLONASS-only, GPS+GLONASS) were compared by changing different data intervals (1, 5, 10, 15, 30 sec).