



Analyzing site coordinates and tropospheric delays obtained by Real-Time PPP

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PPP denotes a positioning technique, where code and phase measurements from a single GNSS (Global Navigation Satellite System) receiver were used to produce precise positions with the aid of globally valid precise orbits and clock corrections in general provided by organization like the International GNSS Service (IGS). Typically an ionosphere free linear combination is used to eliminate the ionospheric delay. Other error terms like tropospheric delay or receiver clock biases can be estimated. Even though real-time PPP is in the starting phase there are a number of applications already in place which make use of the technique. On the other hand there are still many unsolved problems like the prevention of float-ambiguities during PPP processing and the availability of real-time correction data, which again directly influences the position accuracy.

As PPP is close to become a major technique in the field of sciences research activities there is an increased interest to provide the estimated parameters like coordinates or tropospheric delays also in real-time. Therefore the IGS real-time working group started to provide the user-community with real-time GNSS data and derived products such as precise clock corrections and orbits. Organizations or reference stations providing real-time GNSS data can participate in the working group or provide their data-streams via a central service. In this context also the Institute of Geodesy and Geophysics of Technical University Vienna (TUW) contributes by means of an individual clock and orbit data stream.

This presentation deals with the accuracy of real-time PPP coordinate solutions obtained by means of the TUW data stream in comparison to RTK techniques and discusses also the related period of convergence. Furthermore post-processed site-coordinates and tropospheric delays calculated by the PPP technique based on the one hand on IGS products and on RT-data corrections on the other are analyzed.