

Analysis of the Static Positioning Performance of CSRS-PPP Service

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Key words: GNSS/GPS; Positioning; CSRS-PPP; PPP-AR

SUMMARY

In the last decade, the use of Global Navigation Satellite System (GNSS) has been drastically increased with the development of the new GNSS systems and algorithms. The Precise Point Positioning (PPP) method has become more ubiquitous since it eliminates the reference station requirement. When 24-hourly GNSS data is used, the PPP method offers high integrity results. Further, GNSS data processing has become easier with the online services such as CSRS-PPP (The Canadian Spatial Reference System-PPP), AUSPOS (Online GPS Processing Service). AUSPOS and CSRS-PPP services use the precise relative positioning and PPP methods. CSRS-PPP service had a modernization in October 2020. This modernization allowed users to process GNSS data with ambiguity resolution (AR). The PPP with ambiguity resolution (PPP-AR) method can provide more stable positioning accuracies. However, the modernization not only implements AR, but also includes minimization of the effect of clock discontinuity at day boundaries. In this study, static positioning performance of modernized CSRS-PPP service is examined. For this purpose, 24-hourly data of 5 IGS (International GNSS Service) station for one week period was used. The dataset processed before and after the modernization of CSRS-PPP. The results were investigated in terms of positioning accuracy.