

Comparison of Accuracies Between Different Levels of PPP

Lakshan W.H.^{1*}, Munasinghe D.S.¹ and Karandana C.A.³

¹*Department of Surveying & Geodesy, Sabaragamuwa University of Sri Lanka*

³*Department of Remote sensing & GIS, Sabaragamuwa University of Sri Lanka*

**whlakshansurvey@gmail.com*

Precise point positioning can be considered as an alternative solution for the traditional GNSS positioning techniques with the use of a single GNSS receiver. Precise Point Positioning (PPP) has started to make positioning utilizing undifferenced carrier phase and pseudo-range observations. The main objective of this research was to examine the accuracy variation between Different levels of PPP solutions such as Ultra-rapid(observed half), Rapid and Final, which are provided by the International GNSS service .so in this study, five GNSS observation points were established in Sabaragamuwa University of Sri Lanka premises. After Data were collected as three-hour observations for all five points, The collected data were processed using the RTK LIB and CSRS PPP According to the result obtained, CSRS PPP and RTK LIB results showed a significant difference, so after the same data were processed using the DGNSS method in order to further confirm which platform is best one. For further assessment, Distance and Height differences between points were measured. However, in the end, CSRS PPP showed the best performance for the three PPP product levels. It was concluded that centimeter-level accuracy could be achieved in static mode while Final Product showed better accuracy than others. Rapid and Ultra Rapid products showed almost equal accuracy horizontally. Accuracy for the Up direction was led by the Ultra-rapid (observed half) product, followed by the Final and Rapid products, respectively.

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