

A Robust and Wide Area GPS Monitoring System by PPP-AR

WADA, Akira^{1*}, ISHIKAWA, Kumiko¹, Minoru Hayashi¹, Hiroaki Yamada¹, Jun Sugimoto¹

¹Hitachi Zosen Corporation

Real Time Kinematic (RTK) solution is usually applied to monitor Earthquake, Volcano, Landslide, Buoy and any real time events. When strong earthquakes occur, RTK has possibilities of getting not accurate coordinate because the reference station may move together. Precise Point Positioning (PPP) is other method for real time solution and it works without reference station. But the accuracy is not enough to monitor such events.

To solve this problem, we have developed new GPS real time monitoring system by PPP with Ambiguity Resolution (PPP-AR). PPP-AR needs correction data from reference station network. We do not have to set up the network close to client station because it can apply to almost 1000km area. And the accuracy is almost equal to RTK.

We designed several local reference networks in Japan in our system. We run parallel solutions for one client station with each correction data from these networks in real time. When any movements happen in a network, our system selects other area's data automatically. Therefore, we can get accurate results robustly.

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