

SGD001-09

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Development of high accurate L1 GPS measurement method using regional ionospheric model

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To monitor volcanoes or landslides using GPS analysis, we need to setup many GPS receivers around over 10km area. Usually, to analyze such as long baseline solution, we need dual frequency receivers to correct some error factors, and of course they are expensive. Then if we can get same accurate results with only L1 receiver, it is very helpful from an economic standpoint. So, we developed a regional ionospheric model for high accurate L1 only GPS measurements.

We verified our model with GEONET stations at Omaezaki and Izu area. These results are nearly equal to the results with dual frequency receiver and better than HiRIM solution[1].

[1] C. Rocken, J. Johnson, J. Braun, K. Kawana, Y. Hatanaka and T. Imakiire, 2000, Improving GPS surveying with modeled ionospheric corrections, Geophys. Res. Lett., 27, NO.23, 3821-3824.

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