

Analysis of GPS Observations at IEODO Ocean Research Station in Korea

Byungmoon PARK, Tajul A MUSA, Hungkyu LEE, Yunsoo CHOI and Hasu YOON (Republic of Korea)

Key words: GNSS/GPS; Positioning; troposphere ZPD(Zenith Path Delay); IEODO;

SUMMARY

IEODO(“Socotra rock”) is located 150km from southwest of Jeju island(Republic of Korea), and also between the Republic of Korea, Japan and China, as the submerged rock. Most shallow area is about 4.6m under surface of the sea, and the range of IEODO is 600m from north to south, 750m from east to west in basis 40m of sea level. IEODO is very important to scientific analysis that it is located the entry route of sea current and typhoon of the Republic of Korea. For this reason, Korea built IEODO Ocean Research Station in June 2003, set high-tech observation system of the ocean, meteorology, environment and collect • provide the ocean, weather forecast, marine traffic safety, prevention of coast disasters, prediction data about climate change. In this research, estimate precise positioning and velocity vector using the GNSS DATA of IEODO Ocean Research Station, and analyze troposphere ZPD(Zenith Path Delay) about typhoon occurred period in 2011. Bernese5.0 is used in GNSS DATA analysis and Data period is from 2009 to 2012. Also through the composition 13 GPS CORS in network, accomplish the relative positioning process. The coordinates accomplish the Multi session network adjustment by normal equation accumulation of daily solution. In case of estimate velocity vector, check the annual 2.48cm crustal movements to southeast direction. As a result of analysis the Tropospheric delay in 2011 when terms of occurred typhoon, check the correlation with typhoon and GNSS ZPD data. It will be helpful data to enhance the accuracy of weather forecast through the connection of another meteorology data. From now on, it will be look forward to set up the status of IEODO Ocean Research Station and attribute various scientific data to international society that through the continuous monitoring and research.