THE CURRENT STATUS OF GPS NETWORK, DATUM TRANSFORMATION AND REAL TIME KINEMATIC GPS POSITIONING IN KOREA

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ABSTRACT

Current status of GPS network, datum transformation and real time kinematic GPS positioning in Korea is investigated. Datum transformation from Korean geodetic system to WGS-84 shows that apparent differences between the Korean datum and WGS-84 horizontal coordinates for the same point are approximately -11.5 to –10.2 seconds in latitude and 7.2 to 8.3 second in longitude. The posterior RMS difference between them is 35cm. The orthometric heights by WGS-84 ellipsoidal height and local geoid model showed 12cm RMS differences from the national datum. In addition, it is remarkable that the test of RTK-GPS positioning for cadastral surveying showed cm-level accuracy whose baseline lengths more than 20km.

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