Analysis of National Vertical Datum Using Tidal Gauge Bench Mark in Korea

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Key words: Hydrography; Tidal Bench mark(TBM); Local Mean See Level(LMSL); Incheon Mean See Level(IMSL);Sea Level Slope

SUMMARY

Necessity of connection between ocean and land height system for coastal development and disaster prevention is increasing due to sea-level rising occurred by recent global warming and more natural disasters than before. There is a rising interest on the ocean and land height system. Because different standards of vertical datum of ocean and land are being used for each different purposes. Thus, this study analyses local mean see level which decides vertical datum of ocean and geometric heights on Incheon mean see level and national geoid model which decides vertical datum of land using 20 points of TGBM(2013). The result of the comparison between local mean see level and geometric height national geoid model is that 3 out of 20 points showed residuals over 10cm. The cause seemed to be inflow of river, relocation of Tidal Gauge Station, or change of local mean see level due to topographical change by harbor constructions. This study checked the possibility of connection between ocean and land vertical datum standards. To connect those two, increasement of connected survey data for ocean and land heights, managing and sharing vertical datum by Korea Hydrographic and Oceanographic Administration and National Geographic Information Institute are required. Providing accurate vertical height standards would take an important role in efficient and economic coastal development and preventing disasters.