



Real time tidal observation utilizing Veripos Ultra high accuracy DGPS height data

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A feasibility study of utilizing Veripos Ultra DGPS service for real time tidal observations and analysis is presented. Veripos Ultra provides several positioning services for hydrographic and Dynamic Positioning (DP) applications. The Ultra correction is a precise point positioning method to achieve horizontal and vertical accuracy less than 10 to 15 centimeter. Since using real time tidal observations offers some benefits such as: (1) removing the tide gauges, (2) real time bathymetry, directly refer to chart datum, (3) using MSL as a dynamic moving average on different geodetic positions, (4) real time tidal analysis and co-tidal chart production through the working field, (5) removing all the post processing soft and hard ware requirement, (6) and at the end, cost saving, it was always interested by hydrographic surveyors and companies. This paper describes extracting the tidal observation from DGPS height observation which is corrected by Veripos Ultra service. The observed height is studied during rough and calm sea. The results show the tidal observation accuracy while the sea condition is calm, is 10 to 15 centimeter, but during rough sea especially when the altitude of tide and wave is comparable, tidal data will be completely destroyed. All the results are presented as a case study in Persian Gulf by this paper.