Differential Positioning Using Promark X-CM GPS Receivers

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SUMMARY

The most common example of a time-varying system that is encountered by surveyors is one in which the instantaneous position of a moving GPS antenna is to be estimated using the "kinematic GPS surveying" technique. As the achievable accuracy for single point positioning with GPS is insufficient for many applications, DGPS serves to eliminate various errors of single point positioning. This has led to the investigation of the best time of carrying out GPS observations and some factors affecting the accuracy obtained for fixes using the Magellan ProMARK X-Cm GPS receiver in the differential mode. Morning and afternoon observations were carried out on selected points inside the University of Lagos campus and on a point outside the campus for duration lasting from 10minutes to 30minutes. The outcome of the investigations shows that the morning observations for points located in an open space and points located far from the base station gave accurate results. Within the duration of the 30minutes observations, the longer the time of occupation at a station, the more accurate the results obtained.

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