

Experiment on kinematic GPS/Acoustic positioning

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We carried out in 1999 a basic experiment on precise seafloor positioning with kinematic GPS positioning and precise acoustic positioning. Three GPS antennas were fixed on the top of a buoy and an acoustic transducer on the bottom. An acoustic ranging system developed under Ocean Hemisphere Project was used for the experiment, but it worked only in a mode of 10-cm resolution. We tried to correct for the effect of the buoy's motion on the GPS/acoustic. Although GPS system accurately measured the buoy's motion of relatively short period, the effect of the motion on the acoustic ranging was not removed well, and root mean square of the discrepancies between the GPS and acoustic positioning was about 20 cm.