［論文要旨］

DGPS および RTK-GPS の実用化に関する研究

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A position with high accuracy of cm or sub-cm is available in RTK-GPS, if the satellites' constellation and the carrier propagation are proper. Although it is applied to a land survey and setting of construction materials, it is sometimes observed that the shadowing by the building, terrain, anf construction machinery and multipath phenomena induced by them degrade severely the accuracy. The authors show by a simulation that the error ellipse, deduced from the fixed positions' distribution at a fixed point, expands to the direction of satellite of which carrier is disturbed and that the high accuracy positioning is available by eliminating the satellite from the positioning procedure in spite of the increase of PDOP. They also show that the quasi real time inference of disturbed satellite is possible, by observing the difference between the error ellipse and covariance ellipse, deduced by satellites' constellation.