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Abstract

*A*ccuracies of Real-Time Kinematic Global Positioning (RTK-GPS) system, Total Station (TS) and automatic level were investigated. In the statistical evaluations, Kriging method was used with spherical, exponential, and Gaussian models. The survey results demonstrated that an area of 3.5 ha or smaller can be best explained with Gaussian model, while the larger areas require a spherical model. A vertical error of 60 cm and a horizontal error of 30 can be observed when the survey points outside the construction area are eliminated. The optimum area per survey point was calculated to be 20x20 m^2 to increase the accuracy. This case study showed that an inaccurate survey can result over cost estimations up to 27 %.

Keywords. RTK-GPS, Total station, automatic level, Kriging.