APPLICATION OF ROBUST M-ESTIMATORS
METHOD IN DEFORMATION

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ABSTRACT

The method of least squares together with the method of robust M-estimators have introduced and applied on a deformation model. These two methods have been applied in the adjustment of the same network that is designed especially for measuring the deformation of a building of an important electric power station. The comparison of results of methods indicates that the least squares method leads to biased results and even useless estimates if the mathematical model does not take into consideration the single-point movement. A procedure to test, retest and estimation is required to get accepted, reasonable and unbiased results. The results were complete and final. The separation of single-point movement and the general deformation model is achieved without complication or difficulty in the case of applying robust M-estimators method. A significance statistical test is applied to investigate the accuracy of results of both least squares and robust M-estimators. It was clear that the robust M-estimators method gives good and better results in the case of the presence a single-point movement.