



Quality assessment of first order precise leveling observation of Iran

M. Amighpey(1), S.Arabi(1)

(1) Geodetic and Surveying Dept., National Cartographic Center, Tehran, Iran

(Amighp@ncc.neda.net.ir)

For using least square adjustment, we should be certain that there isn't any systematic error in our observation. Various resources of systematic error influence leveling observations that reduce the quality of height networks. One of the best methods to control height network before adjustment and assessment of presence of systematic error in observations, is statistical analysis of the leveling observation. Quality assessment parameters based on observation can be determined that this parameter should follow normal distribution in absence of systematic error. Then the amount of aberration of these parameters from normal distribution can show the influence of systematic error on observations. In this article, we after inserting the quality assessment parameters studied these parameters in first order precise leveling network of Iran. Results show the absence of gross errors but presence of some systematic errors in this network. Then we tried to assessment these errors and reduce some of them such as refraction and extension coefficient of rod and studying assessment parameters after these corrections and reached the best fitting the parameters to normal distribution after corrections but presence of systematic error yet.