

S. Murakhovskyy

National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine

EVALUATION OF GYROTHEODOLITE ERROR UNDER RANDOM VIBRATION

A comparative analysis of existing works devoted to analysis of dynamics gyrotheodolite under vibration of the basement. Actuality of the problem definition vibration error of random vibration is shown. The analysis of the dynamics of gyrotheodolite with random vibration is presented. A general formula to determine the average vibration error obtained. Shows compliance of the forms of the expression of vibration errors on the regular and random vibration. The analysis of parameters of the device and external factors on the value of the error is presented. Modeling the dynamics of gyrotheodolite with random vibration is presented. Show compliance with theoretical results obtained software experiments. Further research provided to reduce the variance of output gyrotheodolite by Kalman filter.

Keywords: gyrotheodolite, vibration error, random vibration.