THE PROBLEM OF INITIAL DATA ERRORS INFLUENCE ON THE DETERMINATION ACCURACY OF TECHNOLOGICAL EQUIPMENT GEOMETRIC PARAMETERS

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The article deals with the problem of initial data errors registration in estimating the accuracy of coordinate points determination used in geodetic observations for the deformation in drying aggregates, kilns, and in other technological equipment. The investigated objects are of a complex design, and they operate in the conditions of high temperatures and vibration, that's why observations for the technological equipment deformation are a rather complicated geodetic problem. In the process of geodetic monitoring, angular and linear intersections are often used in order to determine the marks coordinates fixed on the objects being observed. The received results accuracy depends greatly on various kinds of errors. In establishing geodetic reference networks initial data are considered to be without any errors. However, geodetic reference networks points may involve some errors due to angular and linear measurements. In the article the authors present the technique and example of the initial data errors calculation. The received data prove, that in order to make a complete analysis of the precise establishment of linear – angular geodetic networks it is better to take into account initial data error influence on the defined points coordinates. The results of experimental calculations show that the neglect of initial data errors in defining the technological equipment geometrical parameters results in poor quality data in the process of geodetic monitoring.

Key words: geodetic monitoring, measurements accuracy analysis, covariance matrix of coordinates, errors ellipse, initial data errors registration, angular notch, linear notch.

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