

METHOD OF DETERMINING THE EXACT POSITION OF THE OBJECT FROM FLYING PLATFORM

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The article presents the theoretical calculations of the converted space geodesy formulas for the coordinates of inaccessible points by three starting points and the measured distances. A testing of the method is done on calibration base of second grade; calculated an optimal length of a basic vector for achieving the highest accuracy of the inaccessible points coordinates. The iterative process of determining the coordinates in MS Excel is programmed. The prospect of further research will be an analysis of existing unmanned vehicles and a laser rangefinder in order to create a prototypal sample of measurement technology to accurately determine the position of inaccessible points.

The need to study the method of determining the coordinates of inaccessible points of areas, providing maximum efficiency and

ease of computation and implementation, evaluate the accuracy, with which the coordinates are established, is relevant today.

As a result of research, modified space geodesy formula for determining the spatial coordinates of ground inaccessible points are proposed in the work. A formula for calculating the optimal length of the basic vector to achieve the highest accuracy in determining the position of inaccessible points is suggested. It is shown that at a distance of 1 km the coordinates of inaccessible points can be determined to within 0,029 meters.

The experiment on the calibration base of second grade to test the method is conducted. We received a confirmation of results by using the electronic total station as a laser rangefinder. The accuracy in determining the inaccessible point position is 0.020 m.