

**Abstracts of monograph work and publications
presented for participation in a competition for the occupation of the
academic position "Associate Professor"**

on Chief assistant Evgeni Grishev Stoykov, PhD

Monograph

2019 – Issuance of: Habilitation work – Monograph - "**Technical means and systems for hydrographic measurements**".

Abstract: The presented monographic work aims to systematize and analyze the work in the planning of hydrographic studies. The issues in the collection and processing of hydrographic data, their analysis and quality, the process of compilation and presentation, are discussed and analyzed. The physical characteristics of seawater, different types of acoustic systems, their principle of operation, sources of error, and quality control techniques for hydrographic data collection are discussed.

Publications

1. 2018 - Mihaylova M., Stoyanova R., **Stoykov E.**, Ivanov S.-"Use of drones in the field of geodesy", scientific conference with international participation MATTEH 2018, SHU "Bishop Konstantin Preslavski", Volume 2, Part 2, 92-97 p., ISSN 1314-3921.

Abstract: A drone, in a technological context, is an unmanned aerial vehicle, officially known as an Unmanned aerial vehicle (UAV) or unmanned aerial vehicle systems. Aircraft can be controlled remotely or fly with different degrees of autonomy - remotely operated by a human operator, self-managed flight plans in their embedded systems working in conjunction with onboard computers, sensors and GNSS.

2. 2018 - **Stoykov, E.**, „Analysis of the methods for transforming spatial cartesian coordinates (X, Y, Z) obtained from GNSS measurements, in ellipsoidal coordinates and height (B, L, H)“, Yearbook: Technical Sciences. Vol VIII E. Shumen, 2018, University publishing house "Bishop Konstantin Preslavski", 157-165 p. ISSN: 1311-834X.

Abstract: For GNSS measurements, the transformation from spatial rectangular geocentric coordinates (X, Y, Z) to ellipsoidal geographical coordinates (B, L, H) is more important. There are many different ways of solving this, with the main difficulty being finding the ellipsoidal latitude B. In literature this problem is solved by iterations, but there is also a possible closed solution.

3. 2018 - Stoykov, E., „Technology of satellite measurements when creating a GPS network“, Yearbook: Technical Sciences. Vol VIII E. Shumen, 2018: University publishing house "Bishop Konstantin Preslavski", 153-156 p. ISSN: 1311-834X.

Abstract: The article describes the technology of satellite measurements in creating a GPS network for the needs of geodesy. GPS measurements are significantly different from classical surveying because they are time independent and there is no need for direct visibility between points. Because of these differences, GPS measurements require other methods of planning, execution and processing.

4. 2018 - Stoykov, E., „Analysis and evaluation of measurement accuracy with dual -frequency GNSS receiver Trimble R4 in the RTK (Real Time Kinematics) mode“, Yearbook: Technical Sciences. Vol VIII E. Shumen, 2018: University publishing house "Bishop Konstantin Preslavski", 147-152 p. ISSN: 1311-834X.

Abstract: The report examines GNSS measurements of points from the National Geodetic Network in the region of Shumen. Investigation of the dependence and accuracy of the results depending on the RTK (real-time) measurement time. A comparative analysis of the results is carried out.

5. 2018 - Stoykov, E., „Analysis and evaluation of GNSS methods in geodesy“, Yearbook: Technical Sciences. Vol VIII E. Shumen, 2018: University publishing house "Bishop Konstantin Preslavski", 130-133 p. ISSN: 1311-834X.

Abstract: The article analyzes and assesses the GNSS methods used in geodesy. GNSS measurements shall be made at geodetic points that meet all general requirements for site selection, stabilization and benchmarking, visibility to other points and local objects arising from applicable regulatory documents.

6. 2018 - Stoykov, E., „Analysis of geodetic networks“, Yearbook: Technical Sciences. Vol VIII E. Shumen, 2018: University publishing house "Bishop Konstantin Preslavski", 126-129 p. ISSN: 1311-834X.

Abstract: The article analyzes geodetic networks when creating a working geodetic network, surveying and tracing objects. In order to determine the coordinates of a certain number of points in a given coordinate system, it is necessary to perform measurements of quantities by which the coordinates of the points can be calculated.

7. 2018 - **Stoykov, E.**, „Analysis of the evolution of global navigation satellite systems“, Yearbook: Technical Sciences. Vol VIII E. Shumen, 2018: University publishing house "Bishop Konstantin Preslavski", 119-125 p. ISSN: 1311-834X.

Abstract: The article analyzes the development of global navigation satellite systems. The widespread use of GNSS is an indisputable fact and the need for them, and their multilateral application is increasing. While they were initially used primarily for military purposes, now the possibility of their use and effectiveness in civilian life has already been proven in everyday practice. This is a basic prerequisite for their development and improvement for civilian purposes.

8. 2018 - **Stoykov, E.**, "Methodology for measurement when creating a working geodesic basis by using GNSS in RTK mode", MATTEH 2018: Collection of scientific papers. Volume 2. Part 2. Shumen: University Publishing House "Bishop Konstantin Preslavski", 75-80 p. ISSN: 1314-3921

Abstract: The report examines a methodology for measuring points in the creation of a working geodetic base by using GNSS in RTK mode. One of the main advantages of RTK measurements is the ability to accumulate a large amount of data over a relatively short period of time, which allows direct determination of the coordinates of points in the planned and altitude positions.

9. 2018 - **Stoykov, E.**, "Establishment of stochastic links in comparison of geodetic measurements performed by classical and GNSS methods", MATTECH 2018: Scientific papers collection. Volume 2. Part 2. Shumen: University Publishing House "Bishop Konstantin Preslavski", 81-84 p. ISSN: 1314-3921

Abstract: The report examines the relationship between the different coordinates and height measurements of measured geodetic points using the classic and GNSS method. In order to establish the stochastic relationships between different comparisons of coordinates and the heights of measured points by the classical and GNSS methods, it is necessary to address two

essential questions: what is the strength of the relationship and what is the form of the relationship.

10. 2018 - **Stoykov, E.**, "Statistical analysis in comparison of geodetic measurements carried out by classical and GNSS methods", MATTEH 2018: Collection of scientific papers. Volume 2. Part 2. Shumen: University Publishing House "Bishop Konstantin Preslavski", 68-74 p. ISSN: 1314-3921

Abstract: The study aims to determine the efficiency of GNSS in RTK mode in determining coordinates and elevations of ground points and to perform a statistical analysis of the results obtained by comparing the classical and GNSS methods.

11. 2017 – Mihaylov Pl., Stoyanov B., **Stoykov E.**, "Filming of Shumen fortress with unmanned aerial vehicle and Ortorektificirane – assessment of the accuracy" sp. "Geodesy, Cartography, Zemeustrojdtvo", Issue 5-6/2017, YEAR LVII, 9-13 p., ISSN 0324-1610.

Abstract: Photo-shooting with an unmanned aerial vehicle (UAV), get a hierarchical digital - 3D model, digital terrain model (DTM) and orthophotoplan, on which to perform highly accurate measurements and analyzes. The purpose of the study is to determine the deviations between the control points measured with GNSS in RTK mode and their place on the model.

12. 2016 - Andreev A., Mihaylov Pl., **Stoykov E.**, "Comparative analysis of the results obtained from altitude measurements by different methods", scientific conference with international participation MATTECH 2016, SHU "Bishop Konstantin Preslavski", Tom2, 129-134 p., ISSN 1314-3921.

Abstract: Nowadays, the introduction of a modern elevation system is an important moment for the development of national geodetic reference systems. The study aims to determine the effectiveness of GNSS RTK mode in determining the altitude and the accuracy of the results when comparing classical and GNSS methods.

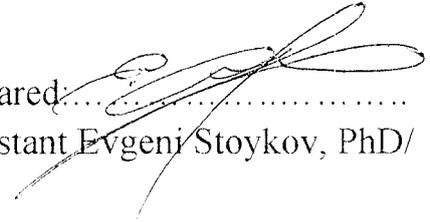
13. 2015 - Kyurkchieva D., Mihaylov Pl., Vladev D., Vasileva D., Borisov B., **Stoykov E.**, Ivanov S., Hristov Hr., Kyurkchiev P., "Harman Kaya: Natural phenomenon-Sanctuary", National Scientific Conference "Interdisciplinary Study of Megaliths", 13 November 2015. Shumen, 199-214 p., ISBN 978-619-201-066-9.

Abstract: The Harman Kaya Rock Complex is an interesting natural rock phenomenon with the exoticism and silence of its frozen reddish volcanic rocks.

The place was probably quite attractive to the ancient people, with the fact that these rocks are easily susceptible to cultivation. Thus, they created a unique complex whose dating and purpose remains a mystery.

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Shumen

Prepared:.....
/Chief assistant Evgeni Stoykov, PhD/

A handwritten signature in black ink, appearing to be 'Evgeni Stoykov', written over a dotted line. The signature is stylized and cursive.