List of abstracts

Books/Monograph

Железов, Г., 2022. Реконструкциони и трансформационни модели и моделиране на системи от влажни зони в крайбрежните региони на България. Дайрект сървисиз. С., pp. 254. ISBN 978-619-7671-46-9.

Zhelezov, G., 2022. Reconstruction and transformation models and modeling of wetland systems in the coastal regions of Bulagria. Direct services. Sofia. pp. 254. ISBN 978-619-7671-46-9.

Abstarct: The monograph "Reconstruction and transformation models and modeling of wetland systems in the coastal regions of Bulagria" is developed in four main chapters, covering theoretical and practical problems of spatial models and modeling of wetland systems in the coastal regions of Bulgaria. The author develops the fundamental importance of wetlands for human civilization by defining their multifaceted significance and develops it in the context of contemporary environmental problems, providing a complex of ecosystem (landscape) goods and services. The importance of wetland nature systems is focused on the fact that: 1. They contain huge bodies of water. 2. A key role in their participation in the water cycle and support the main life systems of the Earth. 3. Filtration and purification functions in relation to drinking water in the world. 4. Main area of life and reproduction for most of the fish species on Earth. 5. Center of economic activities such as food production, transport, tourism, etc. 6. Regulatory and protective role for many lands in terms of flood protection. 7. Habitats for rare and endangered plant and animal species. 8. Form a unique landscape diversity. 9. They are related to the cultural identification and traditions of many countries, peoples and civilizations around the world. The first chapter is realted with the theoretical foundations of nature and the scientific understanding of wetlands. There are integrated understandings of both the basics of basic sciences and well-established formulations of world organizations, regulations, laws and more. The three main components – water masses, hydromorphic and hygromorphic vegetation and hydromorphic soils – have been identified as leaders in defining a space as a wetland. The second chapter develops the thematic foundations of spatial models and modeling related to their design, compilation, editing and communication. For particular importance are the defined reconstruction and transformation models directly related to the dynamics, evolution and degradation of wetland systems. The third chapter of the book examines the nature, delineation and spatial dimension of the coastal zones in Bulgaria, respectively the Danube and the Black Sea coastal region. Characteristics and spatial models of some of the wetland systems in the Danube and Black Sea coastal regions have been made. The fourth chapter focuses on some current problems of wetland systems in Bulgaria, such as eutrophication and degradation processes in some of the more significant wetland systems. A model of classification of wetland systems of the Danube and Black Sea coastal regions is presented. The final part observes the general leading functions, importance and natural capital of the wetland systems. Emphasis is placed on the attitude and influence on the parameters of modern society, economy, nature protection and overall civilizational development. The presented scientific monography has an authorial character and can be useful to all specialists in the field of geography and natural

sciences and all professional areas that are related to the problems of investigation, management, conservation and development of the natural environment in Bulgaria.

Chapters

Zhelezov, G. 2011. Models and strategies for sustainable management of mountain territories in Central and Southeastern Europe. In Sustainable Development in Mountain Regions: Southeastern Europe. Springer. 2011. p. 273-279. ISBN 978-94-007-0130-4; e-ISBN 978-94-007-0131-1.

Abstract: The chapter shows strategies for sustainable management, development and use of the potential of mountainous areas in Central and Southeastern Europe. The research concentrates the experience of single countries or groups of countries connected with organization and optimization of human activities in various economic areas. Interaction between different programmes or initiatives is a key moment for Balkan countries in the way for determination and foundation of Balkan convention for sustainable development of mountain regions. We have a good practice of Alpine Convention and relevant experience of Carpathian Convention as an example.

Балтеану Д., Д. Догару, Г. Железов, Б. Кулов. 2013. Географска характеристика на региона Калафат-Видин – Турну Мъгуреле – Никопол. В Железов, Г., /редактор/. 2013. Оценка и превенция на риска в Дунавската равнина (регион Калафат-Видин – Турну Мъгуреле-Никопол). Двуезично техническо ръководство (Българо-английско издание). Hazard assessment and mitigation in the Danube floodplain (Calafat-Vidin – Turnu Magurele-Nikopol sector). ТерАрт. С., p. 11-23. ISBN 978-954-9531-20-5.

Abstract: The research presents the main geographical characteristics of the cross-border region Calafat-Vidin - Turnu Magurele-Nikopol. All the main components of the geographical environment are identified and analyzed - relief, climate, water, flora, fauna and soils, as well as protected areas, population, social environment, economy and impact on the social environment.

Коцев, Цв., А. Бендерев, Г. Железов, С. Роман, А. Бела, М. Миклеан, М. Сима, М. Димитрашку. 2013. Технологични опасности. В Железов, Г., /редактор/. 2013. Оценка и превенция на риска в Дунавската равнина (регион Калафат-Видин – Турну Мъгуреле-Никопол). Двуезично техническо ръководство (Българо-английско издание). Hazard assessment and mitigation in the Danube floodplain (Calafat-Vidin – Turnu Magurele-Nikopol sector). ТерАрт. С., p. 186-256. ISBN 978-954-9531-20-6.

Abstract: The study focuses on technological risk in the cross-border region between Romania and Bulgaria in the Danube section Vidin-Calafat - Nikopol-Turnu Magurele. The aim is to raise the awareness of all stakeholders (local authorities, disaster protection services, etc.) regarding the prevention and combating of adverse natural and technological hazards. The study should characterize and assess the frequency and specificity of technological hazards in order to ensure environmental protection and sustainable development of the study area.

Balteanu D., D. Dogaru, G. Zhelezov, B. Koulov. 2013. Study area description. In Balteanu D., M. Sima /Editors/. Evaluarea si prevenirea hazardellor din lunca Dunarii (sectorul Calafat-Vidin – Turnu Magurele-Nikopol). Hazard assessment and mitigation in the Danube floodplain

(Calafat-Vidin – Turnu Magurele-Nikopol sector). Bilingual technical guide (Romanian-English edition). Editura Universitaria. Bucharest. p. 13-20. ISBN 978-606-14-0779-8.

Abstract: The article presents the natural and socio-economic characteristics of the cross-border region Calafat-Vidin - Turnu Magurele-Nikopol. The main components of the natural and anthropogenic environment are described and analyzed - relief, climate, water, flora, fauna and soils, protected areas, population, social environment, economy and their impact on the social sphere.

Kotsev, Ts., A. Benderev, G. Zhelezov. 2013. Technological hazard, water and sediment quality in the Bulgarian sector. In Balteanu D., M. Sima /Editors/. Evaluarea si prevenirea hazardellor din lunca Dunarii (sectorul Calafat-Vidin – Turnu Magurele-Nikopol). Hazard assessment and mitigation in the Danube floodplain (Calafat-Vidin – Turnu Magurele-Nikopol sector). Bilingual technical guide (Romanian-English edition). Editura Universitaria. Bucharest. p. 174-189. ISBN 978-606-14-0779-8.

Abstract: The study examines and characterizes the problems of eastern chemical pollution and water and sediment quality in the Bulgarian sector of the cross-border region Calafat-Vidin - Turnu Magurele-Nikopol. Detailed field studies related to the collection of water and soil samples from representative areas in the region have been carried out. An analysis of the content and degree of contamination was made.

Sima, M., I. Grigorescu, D. Balteanu, G. Zhelezov. 2015. Fostering Community Outreach Activities a Environment Sustainable Trough in Cross-Border Academic Research Partnership. In Integrated Approaches to Sustainable Development at University Level. Making the Links. Edited by Walter Leal Filho, Luciana Brandli, Olga Kuznetsova and Arminda Maria Finisterra do Paco. Springer. ESSN: 2199-7373, ISBN 978-3-319-10690-8, p. 583-599.

Abstract: The focal aim of this study is to provide a general framework of the role of an academic research partnership in fostering community outreach activities to improve environmental sustainability through developing tailored sciencesociety interfaces. The paper seeks to present an overview of the EU Romania— Bulgaria Cross Border Cooperation Programme project entitled "Romanian— Bulgarian cross-border joint natural and technological hazards assessment in the Danube floodplain. The Calafat-Vidin—Turnu Măgurele-Nikopole sector (ROBUHAZ-DUN)" and, particularly, the research collaboration, scientific outcomes and dissemination activities carried out during the 18 month project. The aim of the paper is to offer an example of how to promote environmental sustainability to community members in a rural transboundary area in order to respond to their needs in terms of hazard assessment and mitigation, but also to increase knowledge and awareness of disaster risk reduction, climate change and environment sustainability. A special attention was paid to the main scientific and informative products (promotional materials, maps, posters, guidebooks, university course, reports) which were used as support materials for the dissemination activities undertaken throughout the project in terms of raising awareness and informative campaigns in schools, meetings with local authorities, joint round tables, media events, summer school etc. These activities were aimed at bridging the gap between the academic research and local communities in an area prone to natural and human-induced hazards in order to support environmental sustainability through disaster risk reduction education.

Zhelezov, G. 2016. Models and strategies for sustainable management of mountain territories in Central and Southeastern Europe. In Sustainable Development in Mountain Regions:

Southeastern Europe. Second Edition. Springer. p. 385-391. ISBN 978-3-319-20109-2; ISBN 978-3-319-20110-8 (e-Book).

Abstract: This chapter describes strategies for sustainable management, development, and use of the potential of mountainous areas in Central and Southeastern Europe. The research concentrates the experience of single countries or groups of countries connected with organization and optimization of human activities in various economic areas. Interaction between different programs or initiatives is a key moment for Balkan countries in determination and foundation of the Balkan convention for sustainable development of mountain regions. We have a good experience of the Alpine Convention and relevant experience with the Carpathian Convention as an example.

Koulov, B., M. Nikolova, G. Zhelezov. 2016. Mountain Development Policies in Bulgaria: Practices and Challenges. In Koulov, B., G. Zhelezov /Editors/. Sustainable Mountain Regions: Challenges and Perspectives in Southeastern Europe. Springer. p. 3-17. ISBN 978-3-319-27903-9; ISBN 978-3-319-27905-3 (eBook).

Abstract: The main goal of this research is to analyze the regulatory framework and related geographic problems of regional development policies that concern Bulgarian mountains in the post-socialist period. Based on the need to establish and implement a state policy for integrated sustainable governance of mountain regions in this country, the investigation identifies and structures the challenges to regional development policy making. At the European Union (EU) scale, the most important challenge is related to the absence of territorial policy integration and inept priority setting of regional development. Mountain areas of Southeastern Europe need to become a special focus of EU policy making because they make up the most sizeable parts of the Union's "deepest" periphery. In these areas, the overlap of peripheries of different geographic scales and diverse nature (physical geography limitations, depopulation and aging, severely lagging economies, and increasing political insecurity at the external EU borders) additionally intensifies their unfavorable characteristics. At the state scale, identification of the territorial units eligible for assistance from the hilly belt presents the most socially and politically sensitive challenge for both geographers and regional policy makers. Policy instability, the inadequate scale of territorial governance of mountainous regions, and significant deficiencies in territorial policy integration are also among the challenges to sustainable mountain development policies in Bulgaria.

Zhelezov G. 2020. Reconstruction models of Aydemirska wetland system. In Smart Geography. Springer p. 303-313. ISBN 978-3-030-28190-8; ISBN 978-3-030-28191-5 (e-Book).

Abstract: The wetland systems are one of the most sensitive nature systems. The importance of wetland systems is determined by the fact that they provide a numbers : goods and ecosystems services. The present research observes the problems with spatial transformations of the landscapes in Aydemirska wetland system, in northeastern Bulgaria, which is part of the Danubian catchment. Generation of different space-time models based on old maps and aerial photos gives an opportunity for the -vestigation of the state and parameters of the wetland system. The reconstruction rodels of the landscapes are made based on these results. Investigation of the space r-ansformation in environment historical period is a promising platform for planning ofthe economic activities in the region. Nature conservation will also be part of this : mception, if the object has potential and nature importance.

Papers

Железов, Г., 2010. Възможности за развитие на алтернативен туризъм в системите от влажни зони в крайдунавската зона между Русе и Силистра. Проблеми на географията. Кн. 1-2, С., 51-58. ISSN 0204-7209.

Abstract: The investigation presents some aspect and opportunities for optimization of the touristical activities in Danubian coastal area between Ruse and Silistra. The most important are regions with wetland nature systems. There is determination of six zones of alternative tourism with different level of development: 1. Ryahovska (near village Ryahovo and fish ponds); 2. Kalimok-Brushlyan (near town of Toutrakan and renovated wetland system Kalimok-Brushlyan); 3. Pozharevska (near village Pozharevo and Pozharevsko marsh); 4. Malukpreslavsko-Dolnoryahovska (near village Maluk Preslavets, lake Maluk Preslavets and Dolnoryahosko marsh); 5. Garvansko- Mashkirevska (near village Garvan and marshes Garvan and Mashkirevsko); 6. Srebursko-Vetrenska (near villages Sreburna and Vetren and lake Sreburna).

Христова Н., Г. Железов. 2010. Антропогенни трансформации в Поморийското езеро. Год. на СУ. Том 102, С., 5-13. ISSN 0324-0525.

Abstract: This paper presents the changes of water area of Pomorie wetland during 1941-1991. Base for analysis are aero photos. It contains analysis for the reasons of changing under anthropogenic impacts.

Zhelezov, G., A. Gaberscik, M. Vurbanov, M. Germ. 2011. Characteristic and dynamic of the waters in the lakes Sreburna and Cercnise, Problems of Geography, Book 1-2, Sofia, 107-118. ISSN 0204-7209.

Abstract: The presented study examines the hydrological features of the lakes Srebarna (Bulgaria) and Tsarknitsa (Slovenia). Emphasis is placed on the dynamics and chemical parameters of water masses. They are decisive for the parameters of the ecosystem services in both wetland systems. Lakes Srebarna and Tsarknitsa are characterized by unique landscape diversity and provide different habitats. The specificity of the habitats is related to the dynamics of the waters and mainly to the changes of the water quantities within the hydrological year. The development of a monitoring and control system for water is a key element in the overall protection, regulation and conservation process in both lakes.

Железов, Г., 2011. Проект „Устойчиво развитие на планинските региони в Югоизточна Европа. География 21. Кн. 2. С., 16-19. ISSN 1312-6628.

Abstract: The research is focused on the problems of mountain regions in Southeast Europe. The research itself is aimed at integrating the efforts of researchers from the region through the creation of a scientific network. Potentially, opportunities are being sought to initiate a program and activities for the establishment of an international convention for mountain regions, using the experience of the current Alpine and Carpathian conventions.

Железов, Г., 2014. Интегрирана оценка на природния и технологичния риск в Дунавската равнина в румънско-българския трансграничен участък Калафат-Видин – Турну Мъгуреле-Никопол. Сп. Проблеми на географията, Кн. 1-2. 113-127. 3-11. ISSN 0204-7209.

Abstract: The article presents the purpose and main tasks of the cross-border project "Integrated assessment of natural and technological risk in the Danube plain in the Romanian-Bulgarian cross-border section Calafat-Vidin - Turnu Magurele-Nikopol". A description of the main activities, the project development strategy and the expected results is made.

Коцев, Цв., Георги Железов. 2014. Потенциални източници на химично замърсяване на заливната тераса на р. Дунав в участъка Калафат-Видин – Турну Мъгуреле-Никопол. Сп. Проблеми на географията, Кн. 1-2. 113-127. ISSN 0204-7209.

Abstract: Information on potential sources of chemical pollution and relevant chemical stressors is substantial for environmental quality and hazard assessment. A review of official information on pollution sources within the Danube basin district between Iron Gate and the confluences of Osam and Olt rivers has been made. Economic activities located in this area are considered to have potential impact on the environmental quality of the Danube floodplain between Vidin-Calafat and Nikopol-Turnu Magurele. Nineteen industrial enterprises have been identified as significant sourcesof contamination based on data from the European Pollutant Release and Transfer Register (E-PRTR) referred to 2011. It has been used for brief description of the pollutant sources and volumes of chemical loads. The biggest impact on the studied Danube floodplain sector can be expected by the mining industry and especially from the copper mines and smelter in the town of Bor in Serbia, transferred to Danube by the Timok River. Floodplains along the rivers of Ogosta and Iskar, right-hand side tributaries of Danube, are considered to be significant diffuse sources of heavy metals and arsenic due to historical pollution from mining and ore processing in their drainage basins. Danube floodplain sections downstream the confluences of the rivers Timok, Ogosta and Iskar are likely to receive largest loads of hazardous substances in cases of high flood events, e.g. the catastrophic flood in 2006. The threat of accumulation of metal and arsenic contaminated river sediment has to be considered in the process of ecological restoration and management of the Danube wetlands between Vidin and Turnu Magurele.

Zhelezov, G., 2016. Landscape and hydrochemical specifics of Choklyovo wetland system in Koniavska mountain. Problems of geography. Book 1-2, Sofia. 58-65. ISSN 0204-7209.

Abstract: The presented study covers two main aspects of the Choklov system of wetlands in the Konyavska Mountain. The first is related to determining the landscape characteristics and productivity of landscapes. Higher values are revealed in comparison with the indicators of phytoproductivity in other studied systems from wetlands. The second aspect involves the study of hydrochemical features in three parts of the wetland system. Chemical analyzes of the water show higher oxygen concentrations and lower levels of phosphates, phosphorus, nitrates and ammonia in the southern part of the wetland.

Zhelezov, G., 2018. Review of the modern terminology related with the definition, formation, development and evolution of the coastal zones. Acta Zoological Bulgarica. Suppl. 11. 7-11. ISSN: 0324-0770. ISI Impact Factor (2016) = 0.413.

Abstract: Coastal zones are among of the most populated areas of the Earth. This is determined by the availability of resources, favorable climatic conditions and opportunities for development of various economic activities. The paper is a review, structured in three general parts. First of them is related with the definition of the term coastal zone, second part describes different shore types and the processes of their formation with some examples, and the third part is focused on the morphostructure of the coastal zone. Some changes in terminology in relation with contemporary knowledge are outlined. The problems of development and

evolution of the coastal zones are also noted.

Железов Г., Б. Кулов. 2018. Конвенция за планинските региони в Югоизточна Европа (Балканска конвенция). Проблеми на географията. Кн 1-2. 159-165. ISSN 0204-7209.

Abstract: The article observes the problems of the mountain regions in Southeastern Europe. The other aspect of the publication is related with review of the main researches and activities for the mountain regions in Bulgaria and Southeastern Europe. The two main European conventions for the mountain regions (Alpine and Carpathian) are also presented. Development of the convention for the mountain regions in Southeastern Europe (Balkan convention) is key problem of the study. The experience and results of Alpine and Carpathian conventions can be use for the model in the process of foundation and realization of the new convection for the mountain regions in Southeastern Europe.

Todorov Al., G. Zhelezov. 2018. Mapping the world and map creator functions for collection, integration and data visualization. International scientific journal Micro Macro & Mezzo Geo Information. 10 Jubilee Issue. p. 60-77. ISSN: 1857-9000 (printed version). EISSN: 1857-9019 (electronic version). IF (2016): 4.705.

Abstract: Information technologies are changing the world we live. Nowadays modern people have access to web-based maps for the entire World. By one click we can visit the farthest location or whichever place we are interested in. There are several web sites, visited every day by millions of people for searching, routing or even adding data. But how it is made a global map? There are two main components - initial data and a tool for integration and visualization. When we are talking about detailed (navigable) Global Map, it is easy to imagine the resources needed to be build, and what about to be maintained and to be kept up to date! With regard of the tools, there are advanced GIS software available, even free ones. With that respect one of the components for mapping the World is available and we just need data - data for every continent, country, city, village, neighborhood, street, address, object. Does not sound that easy. Certainly not to the ability to many, but just few companies who map the World.

Zhelezov, G., Al. Todorov. 2018. Spatial modeling and reconstructions of Dolnotsiburska wetland system. Proceeding of 7th International conference “Cartography and GIS”. Sozopol. ISSN: 1314-0604. pp. 595-603. Reg. in Web of Science.

Abstract: The wetland systems are one of the most sensitive nature systems. The importance of wetland systems determines by the fact that they provide a numbers of goods and ecosystems services. The present research observes the problems with the spatial transformations of Dolnotsiburska wetland system in Bulgaria, which is part of Danubian catchment. Generation of different space-time models based on old maps and aerial photos give opportunity for investigation of the state and parameters of the wetland system. The reconstruction models are made based on these results.Investigation of the space transformation in environment historical period is promising platform for planning of the economic activities in the region. Nature conservation will be also part of this conception, if the object has potential and nature importance.

Banov M., V. Tsolova, G. Zhelezov. 2019. Methodology basis and modern technological solutions for reclamation of disturbed lands and soils. Problems of geography. Book 1. p. 3-18. ISSN 0204-7209.

Abstract: The main goal of the presented publication is to propose a methodology for the study of disturbed lands and soils and to present the existing methods for technical and biological reclamation of these lands. Restoration of disturbed terrains is a complex problem determined by a number of factors: geographical and climatic, mining and technical conditions, mechanical and agrochemical properties of soil and geological materials that are seized. The main task in restoring lands damaged by mining or other activities includes increasing soil fertility and creating an ecologically balanced ecosystem. Reclamation is one of the most radical methods for restoration and improvement of disturbed terrains and their return to the full (arable) land fund.

Zhelezov G., Al. Todorov. 2019. Productivity of the Meadow Landscapes in the Region of Kraiste between Rivers Bistritsa and Konska. Problems of geography. Book 1. p. 41-49. ISSN 0204-7209.

Abstract: Assessing the potential of landscapes is a key parameter in my research and is representative of their productivity. They are an important element for the development of the regions and the implementation of good management practices. The region of Kraishte is one of the poorest regions in Bulgaria, despite its proximity to the capital. The study of landscape diversity and the potential assessment of landscapes provide real opportunities for changing the economic situation in the region. The study considers two main areas. The first level is related to the definition and differentiation of landscape diversity. The second part consists in assessing the productivity of the landscape based on the plant productivity of the meadow landscapes.

Железов Г., С. Недков. 2019. Развитие на ландшафтните изследвания в България. Проблеми на географията. Кн . 2. ISSN 0204-7209.

Abstract: The article explores the development of landscape ideas, landscape researches and landscape science in Bulgaria. There are three periods marking the main achievements in the field of landscape science in Bulgaria. An overview of the publications in the field of landscape researches in Bulgaria, ecosystem services and the main landscape maps and map products are created.

Stoyanova, V., Kotsev, T., Zhelezov, G., Sima, M., Levei, E-A. 2019. Copper concentration in the soils of the Danube floodplain between the Timok River and the VIt River, Northwestern Bulgaria. The European Association of Geographers, 2019, ISSN: 1792-1341, ISI IF: 0.567.

Abstract: This paper presents an actual and overall picture of soil contamination with copper in the Bulgarian part of the Danube floodplain between the rivers Timok and Vit. Three sampling campaigns in October 2012, April 2013, and October 2017 are carried out in the frame of two studies. The total content of copper is determined by atomic spectrometry in the soil fraction < 0.100 mm in the first study, and by X-ray fluorescence spectrometry in the soil fraction < 0.063 mm in the second survey. The copper concentration in the collected topsoil and subsoil samples ranges between 9.5 – 742.7 mg/kg with a median of 34.4 mg/kg. About 94 % of the samples exceed the background reference value, 10 % are above the maximum admissible concentration, and 3 % violate the intervention threshold. The copper content peaks in the Timok Valley and decrease downstream the Danube to nearly steady levels east of the Vidin Lowland.

Железов Г., Б. Колев. 2019. Зони на пространствена детерминация на страните в Европа. Проблеми на географията. Кн . 3-4. ISSN 0204-7209.

Abstract: The present research observed the problems related with zones with spatial determination of the countries in Europe. The first aspect of the investigation is analysis of historical, economic, political and psychological factors for development of the processes of integration in Europe. The second aspect of the article is related with analysis of present economical parameters, which reflected to the spatial determination of the zones with integrated countries in European continent. The analysis revealed a certain differentiation of countries in Europe. There is a core of high GDP and GDP per capita in three areas - Western Europe (Germany, United Kingdom, Netherlands, Belgium, Ireland, Switzerland and Austria), Northern Europe (Norway, Sweden, Finland, Denmark and Iceland) and Southwest Europe (Italy and Spain). These areas can be assigned a specific gravity zone of the other countries in Europe - 1. Towards Western Europe – countries in Central and Southeastern Europe (Poland, Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Romania, Bulgaria,and others); 2. Towards Northern Europe - Baltic countries (Estonia, Latvia, Lithuania); 3.Towards Southwestern Europe – Portugal and Greece.

Zhelezov, G., 2019. Reconstruction models of Svistovsko-Belenska wetland system development. Problems of geography. Book 3-4. ISSN 0204-7209.

Abstarct: Wetland systems are one of the fastest changing natural systems. The importance of wetlands is determined by the fact that they provide a variety of ecosystem goods and services. The present study focuses on the problems with the spatial transformations of the Svishtov-Belen wetland system in Bulgaria, which is part of the Danube catchment. The generation of different spatio-temporal models based on old maps make it possible to study the state and parameters of the system from wetlands. Based on these results, reconstruction models are generated. The study of spatial changes in time is a reliable platform for the processes of planning and optimization of economic and nature conservation activities in the region.

Железов, Г., 2020. Проф. д-р Иван Батаклиев – съзидател на географската наука в България. Изв. на БГД, бр. 42. 2020. 18-23.

Abstarct: Prof. Ivan Batakliev (1891-1973) is one of main persons in the process of foundation and basic development of geographical sciences in Bulgaria. His general scientific works are related with political geography, geopolitics and antropogeography in Bulgaria. He is founder of these scientific subjects and directions in Bulgaria. The work of prof. Batakliev is also connected with important contributions in physical geography, geography of population and settlements, economic geography, methodology of geographical education and regional geography as first landscape regionalization of Bulgaria (1934), first climate regionalization of Bulgaria (1941) and fundamental works for Pazardzhik town and the region of Pazardzhik (1922, 1923, 1969).

Железов, Г., 2020. Акад. Анастас Бешков – основоположник на регионалните географски изследвания в България. Изв. на БГД, бр. 42. 2020. 16-149.

Abstarct: Acad. Anastas Beshkov (1896-1964) is one of the leading Bulgarian geographic researchers of the 20th century. His fundamental work is connected with development of regional geographical researches in Bulgaria and the first economic geographic regionalization of Bulgaria (1934). The scientific work and expertises of acad. Beshkov are related to important economic national projects as the importance of transport for development of the economy and settlements, decision of the transport problems in Dobrudzha, position of the factory for

fertilizers near Stara Zagora town, an idea for the channel Varna-Devnya, developed in a project in 1965 and realized in 1975.

Железов, Г., М. Николова. 2020. Академик Анастас Иширков – живот посветен на географската наука и на България. Изв. на БГД, бр. 42. 2020. 12-17.

Abstract: This article aims to fill the honorary place, which is laid on the founder of the Bulgarian Geographic Science, Acad. Anastas Ishirkov, in this collection of papers, but also to highlight some lesser known details of his research, socio-political and charitable activities. At the same time,the authors removed some inaccuracies in his biography accumulated over time and added new information about his life and activity. This was made possible by our research in the Archive of the Bulgarian Academy of Sciences, and from the materials for him in the Gipson Archive, as well as by the careful reading of the handwritten autobiography of Acad. Ishirkov.

Zhelezov G., Dynamic of Wetland System in Archaro-Orsoyska Lowland. 2020. Problems of Geography. Book 4. 2020. Sofia. 58-66. ISSN 0204-7209, ISSN 2367-6671 (Online), https://doi.org/10.35101/prg-2020.4.3.

Abstarct: Wetland systems are one of the fastest changing natural systems. The importance of wetlands is determined by the fact that they provide a variety of ecosystem goods and services. The present study focuses on the problems with the spatial transformations of the Archaro-Orsoi wetland system in Bulgaria, which is part of the Danube river basin. The generation of different spatio-temporal models based on old maps make it possible to study the state and parameters of the system from wetlands. On this basis, reconstruction models are generated. The study of spatial changes in time is a reliable platform for the processes of planning and optimization of economic and nature conservation activities in the region.

Железов, Г., Ал. Бендерев, С. Колев, К. Николов. 2020. Връзка на пространственото разпределение на тежките метали в почвата с морфологията на замърсени заливни речни тераси (TOPOMET). Проблеми на географята. Кн. 4. С., 67-80. ISSN 0204-7209, ISSN 2367-6671 (Online), https://doi.org/10.35101/prg-2020.4.4.

Abstract: Concentrations of heavy metals in the soils of contaminated river floodplains can vary greatly over short distances, making it difficult for spatial modeling with the usual approaches. Linking the trace metal contents to the morphography of the terrain using modern geostatistical methods, applied in digital soil mapping, would allow the creation of a predictive model for spatial distribution of pollutants. The research in the project „Relationship of the spatial distribution of heavy metals in the soil with the morphology of polluted floodplains (TOPOMET)“ aims to perform predictive modeling of the spatial distribution of certain heavy metals in polluted alluvial deposits and floodplain soils in selected sections of the Danube river valleys - Archaro-Orsoyska lowland, Ogosta and Lom rivers catchments, using remote sensing methods, spatial data analysis and geostatistics. They will be used for GISbased analysis of a set of morphometric parameters of the topography of the valleys. The information on the parameters and contents of heavy metals in nearly 400 soil samples will be processed using Regression-Kriging Techniques and Generalized Linear Models (GLM)to reveal the dependencies between them and to fit regression models. With the help of the latter, an attempt will be made to predict the spatial distribution of selected heavy metals in the soils of the studied areas. As a result of the project, it is expected to establish morphometric parameters that the best describes spatial variation of heavy metal contents in soils and can be used in different

predictive models. An attempt will be made to develop a technology for the spatial modeling of heavy metal content in the soils of floodplain terraces. This will make it possible to identify and detail the extent of pollution in river valleys as a result of mining extraction and metallurgical production and to take measures to minimize the health risk for the local population.

Железов, Г., Географски елементи в първата история на България от Петър Богдан Бакшев – 1667 г. Проблеми на географията. Кн.1. С. 3-11. 2021. ISSN 0204-7209, ISSN 2367-6671 (Online), https://doi.org/10.35101/prg-2021.1.1.

Abstract: The presented research aims to present the fundamental work History of Bulgaria by Petar Bogdan Bakshev (1667) in all its multifaceted character. Special emphasis is placed on the geographical elements in the work. The basic thesis's in the book can observe in three general aspects – historical, geographical and development of national identity. The attempt to define the Bulgarian national space (land) with its natural characteristics and potential is important in the process of national self-determination and maturation.

Zhelezov, G., A. Benderev. 2021. State of pollution of Ogosta River waters. Rev. Bul. Geol. Soc. 2021, 82, 195–197. Q4.

Abstract. The present research is related to one of the basic component of the environment – waters with study area the Ogosta river catchment. It is based on the investigation of water samples collected during field research in the river monitoring area and laboratory analysis. The research is focused on the state of the pollution and quality of the water. The results can be used in the processes of environmental optimization and realization of the strategies for sustainable development in the region.

Stoyanova, V., Ts. Kotsev, E. Tcherkezova, G. Zhelezov, T. Lubenov, D. Hristova, L. Semerdzhieva. 2022. Land use and land dynamics in the Lom valley for 60 years period as an indicator of the changes in chemical impact of agriculture in soils. Сп. Наука за гората/forest science. Book 1. pp. 89-106. ISSN 0861-007X. Scopus.

Abstract: The study aimed to identify land cover and land use transformations in the Lom River valley to reveal how the pressure of agriculture on the environment in the southwestern part of the Lower Danube basin has changed over the last 60 years. The classes at the fourth level of the CORINE Land Cover nomenclature were mapped using aerial photographs of 1961, 1985 and 1998, complemented with a detailed orthophoto mosaic of 2019. While the changes in the main classes were relatively small over the years, the transformations of the land cover in the lower classes reached up to 60% of the study area at the end of the investigated period. We have identified constant trends of expanding pastures and shrinking labour-intensive crops such as vegetables, fruits, and vines over the past 60 years. The land cover classes were classified into four groups according to pesticides use and the related load of heavy metals for soil. Changes in land use suggest a reduction in the use of pesticides and less intensive accumulation of contaminant metals in the soil of the southwestern part of the Lower Danube Basin.

Железов, Г., В. Стоянова. Пространствени измерения на Мисията на Апостолът на Свободата Васил Левски в Българското землище /Българско географско пространство/. Проблеми на географията. Кн. 1-2. 2022 /под печат/

Abstract: The goal of the investigation is to try to present a geographical analysis of the Mission of the Apostle of Freedom Vasil Levski in the Bulgarian land / Bulgarian geographical space/ analyzing the main points forming the nuclei of revolutionary committees and the main directions of his five tours. Another aspect of the research is to show the geographical space that covers the activities of the Apostle within the then Ottoman Empire, neighboring vassal territories and what part of the Bulgarian land it covers.

Железов, Г., Проблемът за значението на военната география развит в книгата „Военна география и статистика на Македония и на съседните ѝ области на Балканския полуостров“ от капитан Анастас Бендерев. Проблеми на географията. Кн. 1-2. 2022 /под печат/

Abstract: The book consists of four main parts and three applications. With this publication the author sets the modest goal to present to the Bulgarian geographical and scientific community a little known work in the field of geographical knowledge. Captain Anastas Bnederev's book "Military Geography and Statistics. Macedonia and the Neighboring Areas of the Balkan Peninsula (1890) “develops before us the possibilities of a neglected section of geographical knowledge - Military Geography. The detailed reading, analysis and study of the work of Anastas Benderev can provide key information about the Bulgarian lands in the natural geographical, demographic and economic context.

Publications in procedings

Zhelezov, G., 2010. Characteristic of the present ecological status and spatial modeling of Srebarna wetland system, Northeastern Bulgaria. Proceeding of International Conference „Landscape Ecology for the Management of the Wetlands”, Ravenna, Italy. ISBN 978-88 900865-4-0. p.120-126.

Abstract: The article observes the ecological status of most important wetland systems in Northeastern Bulgaria - Biosphere reserve „Lake Srebarna”. The wetland systems are part of the Danube catchments. The water balance is connected with fluctuation of the level of river Danube. The other factor is water flow from the two rivers with irregular regime in the southern part of the wetlands. The general factor is the karst waters in the region. The investigation accents on the speed of the sedimentation process of the different materials in the wetlands and spatial modeling based on aerial photos and satellite images from different periods. The deposit of this material is basic reason for water changes, quality of the water, eutrophication and degradation of the wetland systems. The sedimentation processes are base for spreading of the reed in the lake. This process is general factor for the transformation in the water body. The monitoring of the zone can show the level and direction of the future vegetation expansion in the wetland. The research gives some recommendations for future management plans. They are very important for the process of nature protection and different- conservation activities in the wetland systems.

Железов, Г., 2010. Класификация на влажните зони в България. Международна научна конференция „География и регионално развитие”. София. ISBN 978-954-9649-07-9. 428 436.

Abstract: Classification of the objects develops opportunities for determination of the order in

processes. This fact facilitates comparative researches of the objects with accent of rese Hierarchy and union of the wetlands is base for their classification determined of specific is connected with characteristics of different wetland systems and their interaction with focus of landscape diversity. Present research shows the opportunity for classification of the wetlands in Bulgaria based on Ramsar convention (1971), National action plan for conservation of the most important wetlands of Wetzel (2001). The classification sketches present the general variants for classification of the types coordinate with practical needs in different institutions. The leading element in this classification of all wetland types connected with their protection and conservation, ideation of the models in Ramsar convention (1971) and Wetzel (2001) aiming optimization wetland systems on the territory of Bulgaria. Organization of the information for one of the most is key element in the process of their investigation, sustainable use and protection.

Петров, П., Г. Железов, Ст. Генчев, 2010. Крайдунавско рекреационно-туристическа зона – проблеми и перспективи. Международна научна конференция „География и регионално развитие". София. ISBN 978-954-9649-07-9. 299-306.

Abstract: On the basic of an integrated approach, the Bulgarian Danube coast and islands are considered as a combination of key components of current and potential tourism products: sites of natural and cultural heritage, road infrastructure (public sector) and tourism infrastructure (private sector).

Zhelezov, G., 2011. Modeling of the plant transformations in Biosphere reserve "Srebarna" and related ecosystem service. Proceeding of Joint ICA Symposium. Orleans, p. 274-284. ISBN 978-88-900865-4-0.

Abstract: Wetlands are one of the most dynamic and sensitive nature systems. The differ-ent wetlands provide a number of goods, support permanent human activities and deter-minate some of important ecosystem services. The lake Srebarna is the biggest natural wet-land system along the Bulgarian sector of river Danube. The transformation of the wetland system is connected with the level of ecosystem services. The investigation of the changes in the basic elements of the wetlands (waters, sediments, vegetation and animal diversity) are related with parameters of the ecosystem services in the wetland and surrounding territo-ries.

Nikolova, N., G. Zhelezov, A. Gikov, St. Nedkov. 2011. Background contamination of trace elements in soils of Strandzha's reserves Tisovitsa and Sredoka. Proceeding of Fourth International Scientific Conference – FMNS 2011. Blagoevgrad. 230-239. ISSN 1314-0272.

Abstract: The paper presents the results of the landscape-geochemical investigation carried out in two reserves that are part of nature park "Strandzha". These areas are considered as intact and the results can be treated as background for the concentrations of trace elements. The radial geochemical differentiation of some trace elements such as copper, lead. zinc, cadmium, cobalt and nickel in the soil layers and the vegetation cover has been studied. A comparison of other background areas in Bulgaria has been made.

Zhelezov, G., 2012. Ecosystem services of Srebarna wetland system – spatial characteristics and dynamic, Proceeding of 4th International Conference on cartography and GIS, Albena, Reg. in Web of Science. 187-195. ISSN 1314-0604.

Abstract: Wetlands are one of the most changeable landscape systems. The investigations of the wetland systems give good opportunities for investigation of natural process and anthropogenic impact over a short period of time. The conception of ecosystem services develops the chance for evaluation of the conditions in space and time of the changeable world. Biosphere Reserve "Srebarna" is one of the most famous and rich of landscape and biological diversity Bulgarian protected territories. There are more a sixty year observations and research on different components (with emphasis laid upon bird diversity) in the wetland. These long data recordings allow evaluating the ecosystem services. Investigation of the spatial characteristics and dynamics of the ecosystem services is relevant problem connected with transformation in the wetland system and parameters of the ecosystem services as a result of the natural evolution and long human impact. The research deal with treats two basic states of the wetland and relates ecosystem services based on the aerial photos and satellite images from different periods. The states show the situation in the wetland system and level of ecosystem and landscape services before and after the time of significant anthropogenic impact.

Zhelezov, G., 2012. Spatial modeling and reconstructions of Chernopolska (Karaboazka) wetland system, Proceeding of 4th International Conference on cartography and GIS, Albena, Reg. in Web of Science. 229-237. ISSN 1314-0604.

Abstract: Wetland nature systems are among the most endangered systems in spite of the fact that they have a great influence on human wellbeing, providing the majority of important ecosystem services. Wetlands along Danube River are marked by changes in water level during the year. Water level fluctuations create a variety of habitats with diverse communities. A range of changes in water regime, soil properties and some other factors delineates habitats. Water level during the vegetation period as well as the intensity, timing and the extent of floods influence primary production and other processes, e.g. mineralization, decomposition, colonisation with plants, as revealed by different studies. Chernopolska (Karaboaz) wetland system is situated between rivers Iskur and Vit. It is one of the biggest systems in Bulgarian sector of river Danube. The system has been transformed as a result of human activities. The present investigation is focused on the results of the transformations based on old maps. Reconstruction models have been built by using the information from the old maps.

Железов, Г., 2012. Рискови природни процеси по българското дунавско крайбрежие от устието на река Тимок до Свищовско-Беленската низина. Сб. с доклади от международна конференция "Географски науки и образование", Шумен. 90-95. ISBN 978-954-577-653-3.

Abstract: The present research observes the main nature hazard processes in Danubian sector from the mouth area of river Timok to Svistov-Belene lowland. The basic typologization of the nature hazard in this region can be differentiating in two main groups - 1. Geological and geomorphological hazard and 2. Climatological and hydrological hazard. The investigation is accented on the determination the main regions with potential risk of natural hazard. The activities connected with preliminary researches and prevention of the risk must be concentrate in these areas.

Железов, Г., 2012. Развитие на планинските региони в контекста на общоевропейската политика. Сб. с доклади от конф. "Български национални и ценностите на Европейския съюз: конвергенция и дивергенция". София, 365-373. ISBN 978-954-8765-13-8.

Abstract:

Николова, М., Г. Железов, Ст. Недков, П. Ножаров, Ю. Крумова, В. Николов, А. Гиков, Е. Гачев. 2012. Промени в околната среда и съвременно състояние на защитена зона „Седемте рилски езера". SES 2012 – Eighth Scientific Conference with International Participation SPACE, ECOLOGY, SAFETY, Sofia, Bulgaria, 4-6 December, 377-386. ISSN 1313-3888.

Abstract: The paper presents intermediate results from the monitoring of the global changes in high mountains on a case study in the Seven Rila Lakes area. Investigated are the dynamic and change of the current morphogenetic processes and hydro-climatic conditions in the lakes area and the driving forces about these changes as well as the consequences of them for the lakes ecosystems.

Yaneva, R., G. Zhelezov. 2013. Spatial modeling of the morfohydrographical peculiarities in the Danube Plain between rivers Timok and Iskur, Proceedings of the 22th Intl. Symposium "Modern technologies, Education and Professional Practice in Geodesy and related fields", Sofia, Bulgaria.

Abstract: The application of the spatial models in processes of investigation of the nature system is key element in the present conceptions for management. The model of Danube plain between rivers Timok and Iskur integrates information for the hypsometry, hydrology and elevation in relation with settlement system and infrastructure of the research region. The goal of the investigation is to present the general geographical model of the morfohydrographical parameters. The model covers the basic information for the main relief structure – lowlands, plain areas (zlatii) and river valleys. This model can also be successfully used in the process of optimization of the sustainable land use and whole economical activities in the region.

Zhelezov G., Al. Todorov. 2013. Present status of the landscape diversity in Kraiste mountain region. Proceeding of international symposium "Hilly mountain area – problems and perspectives. Ohrid. Tome 1. 73-79. ISBN 978-6086515539.

Abstract: Mountain regions are one of the most dynamic and changeable areas in the Southeastern Europe. They cover a number of different landscapes, protected areas and protected species. The investigations on these regions are important for differentiation and determination of the landscape diversity, evaluation of the natural potential and present opportunities for development of the regions. Kraishte mountain region is situated in western Bulgaria. The region is characterized by low economical parameters and high level of depopulation. The present research is related with investigation of the landscape diversity and analysis of the potential of the region. This investigation could be integrated in regional development plans and plans for development of the transborder cooperation. The result can be used for optimization of the landuse and all economical activities in the region.

Ivanov, A., G. Zhelezov. 2013. Mountain climate influence on river stream flows and local mean sea level. Proceeding of international symposium "Hilly mountain area – problems and perspectives". Ohrid. Tome 1. 79-89. ISBN 978-6086515539.

Abstract: The mountains climate affects various environmental parameters of neighbor areas, including rainflows, snow covers, river streamflows and other hydrological cycles. The Black Sea is almost isolated from direct influence of the global ocean changes and local variations of

the Mediterranean Sea, so the Black Sea mean level variations depend mainly on local environmental changes and river streamflows. The interconnection between the mountains climate changes and corresponding river streamflows and Black Sea mean level variations is investigated by means of Palmer Drought Severity Index (PDSI) for the period 1871-2005, mareograph observations of the mean sea level since 1875 from several Black Sea stations — Batumi, Bourgas, Constanza, Poti, Sevastopol, Tuapse, Vama and Sokhumi and discharge of some rivers including Danube and Dnepr. The PDSI values are calculated from the grid data for all rivers basins around the Black Sea and separately for the grid areas over the Alps, Balkans, Carpathians, Caucasus and Turkish mountains. The correlation between the interannual and long-term mountain PDSI variations and local river streamflows and mareograph time series are determined.

Yaneva, R., G. Zhelezov, 2013. Morfohydrographic specific of Danube floodplain between rivers Timok and Iskur – peculiarities and spatial modeling, Proceedings of the Jubilee International conference "50 years UVT St. Cyril and St. Methodius", Veliko Turnovo, Bulgaria. ISBN 978-619-208-002-0. 309-316.

Abstract: The application of the spatial models in processes of investigation of the nature system is key element in the present conceptions for management. The model of Danube plain between rivers Timok and Iskur integrates information for the hypsometry, hydrology and elevation in relation with settlement system and infrastructure of the research region. The goal of the investigation is to present the general geographical model of the morfohydrographical parameters.The model covers the basic information for the main relief structure – lowlands, plain areas (zlatii) and river valleys. This model can also be successfully used in the process of optimization of the sustainable land use and whole economical activities in the region.

Железов Г., 2013. Рискови природни процеси във Видинската низина – динамика, пространствено моделиране и превенция. Сб. с доклади от юбилейна международна научна конференция „50 години Великотърновски университет „Св. Св. Кирил и Методий". Велико Търново. ISBN 978-619-208-002-0. 275-281.

Abstract: Problems related with the development and dynamics of risk natural processes have particular importance and relevance in situations ofcertain natural disasters and crises. In many regions, often ignored the danger and no attention is paid to prevention and sufficient awareness of the local population. Vidinska lowland is one of the biggest Bulgarian Danubian lowlands territory and has a meridional projection. The flood risk has leading influence in all Danube lowlands as a result of high Danube water levels and underground waters. The other risk processes are associated with the occurrence of extremely low or high temperatures, strong winds, erosion of coastal areas. This study aims to present a picture of potential natural hazards in Vidinska lowland and support processes ofprevention and risk controls in the region.

Yaneva, R., G. Zhelezov. 2014. Spatial Modeling and Zoning of Regulating Ecosystem Services in Relation to Flood Hazard in Northwestern Bulgaria. Proceeding of 5th International Conference on Cartography and GIS, June 15-21, 2014, Riviera, Bulgaria; ISSN: 1314-0604. p. 341-354. Reg. in Web of Science.

Abstract: Spatial modelling is successfully incorporated in a variety of disciplines in solving different types of problems with explicitly time and space aspect. Within the scope of the research, spatial models tend to explain the spatial distribution of ecosystem's regulating services in the concept of severe nature phenomena. The emphasis of this study is placed over

the Danube lowlands between rivers Timok and Iskur in North-western Bulgaria. The territory of the Danube riparian areas is regularly inundated during the rivers' freshet periods, which comes forward like one of the most hazardous factors. By mapping the morph-hydrographical peculiarities of the Danube lowlands, a complex knowledge for the main landscape features would be achieved and hence, more adequate characteristics of the regulating ecosystem services. Lowlands' peculiarities would be easily visualized via GIS software tool setting the basis of a clear zone definition and mapping the area exposed to flood hazard.

Todorov, Al., G. Zhelezov. 2014. Spatial Modeling of the Morphohydrographic Peculiarities in Kraishte Mountain Region between Rivers Bistritsa and Konska, Western Bulgaria, Proceeding of 5th International Conference on Cartography and GIS, June 15-21, 2014, Riviera, Bulgaria; ISSN: 1314-0604. p. 252-259. Reg. in Web of Science.

Abstract: Spatial modelling as one of the most modern GIS methods, advance in a new way research programs and projects, which purposefulness is connected with nature environment analysis. Spatial modeling in essence integrate a large informational massifs, organized and structured in a specific order in GIS databases. Environmental researches are usually related to the existence of a real object – element or cumulative elements of the nature, characterized with determinate spatial parameters – scope of the spatial modeling. The present research object cover part of Kraishte mountain region, which is situated in western Bulgaria and reach part of the trans-border region with Serbia. The region is characterized with low economic parameters and high level of depopulation. These facts determine the research interest and importance of the study. Morphohidrographical peculiarity describes the basic elements of the environment in the region (relief structures and water basins). Using the opportunities of the spatial modeling we have an overall picture of the region. These are key elements in determination of the region borders. The results of the present research can be used as a base for investigations related with differentiation and classification of the landscape diversity. Using these analysis we have the opportunity to evaluate the potential of the region and give some recommendations for optimization and to it put into useful purpose.

Zhelezov, G. 2014. Models of Reconstructions in Ostrov Wetland System. Proceeding of 5th International Conference on Cartography and GIS, June 15-21, 2014, Riviera, Bulgaria; ISSN: 1314-0604. P. 591-598. Reg. in Web of Science.

Abstract: Wetlands nature systems are one of the most sensitive nature systems. The small changes in the conditions reflect to the parameters in the wetlands. They provide various goods and identify the cultural traditions of many countries. The Ostrov wetland system is situated along the Bulgarian Danubian shore between the mouths of rivers Ogosta and Iskur. The wetlands in Danube catchments are related by fluctuation in water level, which reflect to landscape and biological diversity. The number of different anthropogenic activities are transformed the region. They stopped the natural evolution of the system. The processes of restoration of wetland system are observed during the last year. They are result of changes of the economical activities in the region. The research is based on comparative space analysis of maps and spatial model from different period of time. The building of the reconstruction models are based on the information of these models. Using the models we can investigate the parameters of some nature components and their transformations. The other aspect is related with optimization the evaluation of the potential of the region and management of the territory.

Железов, Г., С. Недков. 2014. Проф. д-р Иван Батаклиев – приноси в развитието на физическата география и ландшафтна екология в България. Сб. с доклади на научна

конференция „География и Регионалистика“ в чест на проф. д-р Иван Батаклиев, 30-31 октомври 2014 г., гр. Пазарджик. ISBN 978-954-9531-25-1. 18-25. Пленарен доклад.

Abstract: The study presents the contributions and achievements of Prof. Dr. Ivan Batakliev in the field of physical geography and landscape ecology in Bulgaria. Special attention is paid to the first landscape division of Bulgaria (1934) and the first climatic division of Bulgaria (1941). Works in the field of geomorphology, hydrology and the importance of natural conditions for the development of different cultures in Bulgaria are also discussed.

Железов, Г., М. Върбанов, И. Ботева. 2014. Личността и учения проф. д-р Иван Батаклиев, Сб. с доклади на научна конференция „География и Регионалистика“ в чест на проф. д-р Иван Батаклиев, 30-31 октомври 2014 г., гр. Пазарджик. ISBN 978-954-9531-25-1. 7-10. Пленарен доклад.

Abstract: The article presents an overview of the activities of Prof. Dr. Ivan Batakliev. Emphasis is placed on his scientific role in the promotion of geographical science and geographical knowledge. The importance of Prof. Batakliev's personality in the founding and development of political geography and geopolitics in Bulgaria was emphasized. The role of Prof. Batakliev outside the scientific sphere as a prominent public figure and authority is also presented.

Железов, Г. 2014. Природен потенциал на Поповския край, Сб. с доклади на VI научна конференция "Попово - минало и бъдеще - 2009", 19-20.10.2009. ч. II, В. Търново. 2014. 260-268. ISBN 978-619-00-0061-7.

Abstract: In the article is made a review of the geographi c features of Popovo and its adjacent municipal territories situated in the eastern part of Danubian plain - relief, minerals, climate, water, soils, landscape diversity. Basing on that are the conclusions about really existing opportunities for further development of the hunting, the rural and historical-cultural, and wine tourism. One possibility for development of the tourism in the region is the work with tourist routes based on the natural and cultural-historical resources in addition to the already existing ones.

Тодоров, Ал., Г. Железов. 2014. Диференциация и пространствено моделиране на ландшафтното разнообразие в региона на Краището между реките Бистрица и Конска, Сб. с доклади на научна конференция „География и Регионалистика“ в чест на проф. д-р Иван Батаклиев, 30-31 октомври 2014 г., гр. Пазарджик. ISBN 978-954-9531-25-1. 245-252.

Abstract: The presented research is related to the differentiation and spatial modeling of the landscape diversity in the region of the Kraishte between the rivers Bistritsa and Konska. The factors for landscape differentiation and main components are analyzed. A landscape map of the region has been created. The main types and genera of landscapes are characterized. Recommendations have been made regarding the optimization of nature management and conservation of landscape diversity.

Chapanov, Y., G. Zhelezov, A. Ivanov. 2014. Mountain Climate and River Streamflows in Southeastern Europe Driven by Solar Activity. Сб. с доклади на научна конференция „География и Регионалистика“ в чест на проф. д-р Иван Батаклиев, 30-31 октомври 2014г., гр. Пазарджик. ISBN 978-954-9531-25-1. 221-228.

Abstract: The article observes the problems related changes in climate and river streamflows in South-east Europe. The research is based on the parameter of the solar activity. Index Sa and long-term Sa variations are developed. The PDSI are calculated for Alps, Balkan and Carpathians mountains.

Добрев, Н., Бендерев, А., Железов, Г.**,** Коцев, Ц.**,** Беров, Б., Иванов, П., Кръстанов, М., Николова, М.**,** Недков, С.**,** Черкезова, Е. 2015. Геологические и экологические риски на речных террасах в западной части болгарского участка реки Дунай. Трудь конгресса:16-й Международный научно-промышленный форум «Великие реки'2014 », 1, ВЗАО «Нижегородская ярмарка», 2015, ISBN:978-5-528-00013, 408-421.

Abstract: The study is related to the problems of risk processes in the Bulgarian section of the Danube. Groundwater fluctuations and river erosion are the main factors. The highest levels of erosion were found near the town of Vidin and the town of Nikopol. Floods in the Bulgarian sector are relatively rare. The town of Lom and the rivers Iskar and Ogosta have a high level of soil pollution - mainly copper and lead from the group of heavy metals.

Chapanov, Y., G. Zhelezov. 2015. Variation of Southeastern European mountain climate due to decadal solar cycle. Proceeding of international scientific conference "Sustainable mountain regions: Make then work", 14-16.05.2015. Borovets, p. 25-32.

Abstarct: The mountain regions in Southeastern Europe are unique natural regions of great beauty and ecological value, and home of the headwaters of major rivers. They constitute a major ecological, economic, cultural, recreational and living environment in Europe, shared by numerous peoples and countries. The strong mountain climate changes and their negative effect on the quality of life are investigated by means of Palmer Drought Severity Index (PDSI), precipitation and temperature calculated over the Alps, Carpathians, Balkans and Caucasus, and the decadal variations of the Total Solar Irradiance (TSI). A linear models of solar influence on climate, based on correlation between the mountain PDSI variations and solar cycles oscillations with 11-, 13-, 22-, 45 and 76-year periods is created. This model is used to predict the periods of danger wet or dry conditions over Southeastern Europe for the next 90 years.

Yaneva R., G. Zhelezov. 2016. Landscape diversity of the Danube plain – exploring the peculiarities in Lom municipality, Northwestern Bulgaria. Proceeding of 17th International Symposium "Landscape and Landscape Ecology". 27-29.05.2015. Nitra, Slovakia p. 204-214. Reg. in Web of Science. ISBN 978-80-89325-28-3.

Abstract: In the ongoing process of global natural changes and socio-economic adaptation, we cannot discuss sustainability without taking into consideration the natural conditions and their impact over the environment. Coupling the broad scale of natural and human factors, the landscape diversity of a particular area creates favourable conditions for various scenarios in the landscape ecological planning. The Danube plain provides such conditions with its landscape diversity and related potential. The present research brings into focus the municipality Lorn - moderately populated area, situated in North-western Bulgaria, bordering with the Danube River to the north. The case study area encompasses different general landscape units - plateau planes, lowlands, river valleys. Only by analysing the landscape characteristics of the research area, the potential of the territory could be revealed and the further analysis could be successfully integrated in the land use management plans and decision making with high socio-natural and economic outcomes. This paper reviews the landscape

diversity into fragmented landscape units, defined by the analysis of the unique liaison of the landscape components in situ. The results are illustrating! in landscape map which combines both the natural and anthropogenic aspects of the researcr analysis and is also well implemented as a visualization tool. The identified landscapes are arranged into a classification system that presents the deterministic role of the differe" components. The discussion pillars step on the landscapes' diversity that gives opportunity for landscape and ecosystem services' evaluation and also - a detail analysis of the region's protection. Moreover, this approach could be successfully implemented into the environment management process, policy implementation and development scenarios.

Zhelezov G., S. Nedkov. 2016. Floods Vulnerability Assessment in the Area of Rivers Ropotamo and Veleka Southeastern Bulgaria. Proceedings of scientific conference "Geographical aspects of land use and planning under climate change". Varshets 23-25.09.2016. ISBN 978-619-90446-1-2. 65-71.

Abstract: The present research observe the problems related to floods and flood vulnerability assessment in the area of rivers Ropotamo and Veleka, Southeastern Bulgaria. The main objective of the investigation is to identify the flood vulnerability zones in the area of Veleka and Ropotamo river valleys. The realization of this objective is connected with check and analysis of data availability, delineation of the floodplains in Veleka and Ropotamo river valleys, identification of the land use within the floodplains and flood vulnerability analysis of Veleka and Ropotamo floodplains.

Zhelezov G., Al. Todorov. 2018. Spatial modeling and reconstructions of Dolnotsiburska wetland system. Proceeding of 7th International Conference on Cartography and GIS. Sozopol. Editors: Temenoujka Bandrova, Milan Konečný. ISSN: 1314-0604. https://iccgis2018.cartography-gis.com/submission/. p. 595-602. Reg. in Web of Science.

Abstract: The wetland systems are one of the most sensitive nature systems. The importance of wetland systems determines by the fact that they provide a numbers of goods and ecosystems services. The present research observes the problems with the spatial transformations of Dolnotsiburska wetland system in Bulgaria, which is part of Danubian catchment. Generation of different space-time models based on old maps and aerial photos give opportunity for investigation of the state and parameters of the wetland system. The reconstruction models are made based on these results. Investigation of the space transformation in environment historical period is promising platform for planning of the economic activities in the region. Nature conservation will be also part of this conception, if the object has potential and nature importance.

Todorov Al., G. Zhelezov. 2018. Productivity of the Forest Landscapes in the Region of Kraiste between Rivers Bistritsa and Konska. Proceeding of the international conference "90 years Forest research institute – for the society and nature" – 24-26.10.2018. p. 239-250. ISBN: 978-619-7379-28-0.

Abstract: Productivity of the landscapes is one of the basic parameter of the landscapes. It is repsentative for the parameters of the landscapes and gives opportunity for evaluation of the potential of the landscapes. The region of Kraiste is situated in western Bulgaria and it is one of the poorest regions in Bulgaria. The investigation of the landscape diversity and present potential of the landscapes is key element in the process of sustainable development of the region and changing of the economical situation. The research includes two general he first

level is related with determination of the general landscape units. The second part consist estimation of the productivity of the landscape based of plant productivity in the landscape units.

Zhelezov, G., V. Stoyanova. 2020. Spatila modeling of the morphohydrographic peculiarities in the catchment of Lom and Ogosta rivers. Proceedings Vol. 1, 8th International ConferenceonCartographyand GIS, 2020, Nessebar, Bulgaria, ISSN: 1314-0604, Eds: Bandrova T., Konečný M., Marinova S. - https://iccgis2020.cartography-gis.com/8ICCGIS Vol. 1/ 8-th ICCGIS_Proceedings_Vol1_(11).pdf. Reg. in Web of Science /в процес/.

Abstract: The spatial modeling of the nature system is common scientific instrument for presentation and interpretation of the basic ecological state and problems of the systems. The present research is related with the modeling of morphological and hydrological peculiarities in the river wetland systems. It observed two main river systems in the geographical space of Northwestern Bulgaria – the catchments of Lom and Ogosta rivers. The interaction between the relief structures and dynamic of the waters is general agent for degradation and evolution of the nature system. The determination of these relations is key element in the process of decision making and management of the territories and regions.

Stoyanova, V., Ts. Kotsev, E. Tcherkezova, G. Zhelezov, N. Koleva. 2020. Land cover changes in the Ogosta valley of the period 1993-2019. Proceeding XXth International Multidisciplinary Scientific GeoConference Surveying, Geology and Mining, Ecology and Management – SGEM 2020, Rescheduled: 16 - 25 August, 2020.

Abstarct: The current research aims to present land cover changes for the period 1993-2019 in the arsenic-contaminated Ogosta River valley in the context of the contaminant dispersal in the soils of the river floodplain caused by the agricultural practices and land use. The investigation is conducted for two test sites situated in the upper and lower stretch of the valley near the villages of Gorna Kovatchitsa and Mihaylovo, respectively. The changes are established for the fourth level of the CORINE Land Cover nomenclature, which is developed for the PHARE countries. Nineteen classes are defined in the study areas. As expected, the classes which indicate arable lands are most common in the valley's bottom due to its flat topography and fertile soils, followed by the orchards and built-up areas of the settlements. The land cover changes have a similar pattern in the two test sites. Vegetable gardens, orchards and vineyards have significantly reduced their area or disappeared completely. The assumed reason is the lack of labour force as a result of the depopulation of this region of Bulgaria. They are abandoned or replaced by crops which allow mechanized cultivation. Some of the arable lands are also left not cultivated and are gradually grassed or covered with bush vegetation. Because of the higher share of orchards and abandoned arable lands in the upper stretch of the Ogosta Valley, the land cover changes there are deeper compared to its lower part. The transformation of the land cover cause reduction of the irrigated lands like vegetable gardens and orchards, thus decreasing the transfer of arsenic and heavy metals from the contaminated Ogosta River to the soil in the floodplain via irrigation.

Tcherkezova E., Ts. Kotsev, G. Zhelezov, V. Stoyanova. 2020. Applying UAV photogrammetry data for high-rsolution geomorphological mapping of a part of the Lom river valley near the village of Valilovstsi (Bulgaria). Proceeding XXth International Multidisciplinary Scientific GeoConference Surveying, Geology and Mining, Ecology and Management – SGEM 2020, Rescheduled: 16 - 25 August, 2020.

Abstract: Floodplains are complex systems which include a wide number of socio-economic activities like agriculture, freshwater fisheries, electricity from power plants and others. They have often highly dynamic property, due to the alternation of fluvial processes,floods, and ongoing sediment transport, as well as of environmental specifics and natural or anthropogenic processes. In the context of the investigation of soil pollution with heavy metals in the riverine floodplains, the availability of geomorphological maps at large scale is of great importance. The rapid development of new remote sensing and computer technologies offers nowadays the possibility for acquisition of high-resolution topographic and land surface data which can serve as basis for digital terrain analysis and geomorphologic mapping. This paper outlines the preliminary results of applying unmanned aerial vehicle (UAV) data for geomorphological mapping of the study area.The methodological approach is based on the two key data products of UAV photogrammetry − the digital terrain model (DTM) and the orthophoto mosaic. The digital terrain model is used for calculation of terrain derivatives such as altitude above the channel network and topographic ruggedness index (TRI), using Geographic Information Systems (GIS). The orthophoto mosaic, on the other hand, is used to calculate local statistical measures, enabling detection of textural and structural properties, as well as for differentiation of features with similar spectral responses but different surface structures. The obtained results show that UAV photogrammetry is a powerful and inexpensive tool for fluvial remote sensing analysis and has the potential for high-resolution geomorphological mapping.

Zhelezov, G., 2021. Chemical peculiarities of the the water resourses in the Upper part of Ogosta river catchments, Nortwestern Bulgaria. Proceeding XXIth Interantional multidisciplinary scientific conference surveying geology and mining ecology. ISSN 1314-2704; ISBN:978-619-7408-36-2. http:// www.scopus.com/sourceid/21100274701 Q4 (0.0220).

Abstarct: The Ogosta river catchments is one of the main water systems in North Bulgaria. The present study focuses on the characterization and analysis of the chemical peculiarities of the water in the upper part of the catchment area of the Ogosta river. It is based on a series of chemical analyzes of water samples collected during field research in the river monitoring area. The results obtained from the four basic different control points taken during the study. The investigation includes field and laboratory research of the parameters of pH and concentration of ammonia, nitrogen, nitrite (nitricole), nitrites (nitrihots), sulfate, calcium, carbonates, phosphates (HR), phosphates (LR), phosphor,nitrate, iron, copper and zinc. It is realized in two general stages field work (collecting the water samples) and laboratory analysis of the number of parameters. The general observation of the research samples and result of the chemical analysis gives increased concentrations in phosphate content in S1, increased concentrations in total phosphorus content in S2, increased concentrations in ammonia content in S3 and high concentrations in phosphates contents in analysis of HR in S4. The results of the investigation are real picture for the present quality of one the basic component of the environment waters. They can be used in the processes of decision making and management of the region. They are also related with the processes of environmental optimization and realization the conceptions for the transformation and sustainable development in the research region.

Zhelezov, G., V. Stoyanova. 2021. Determination of the coastal zone of Danube river in Bulgaria. Proceeding XXIth Interantional multidisciplinary scientific conference surveying geology and mining ecology. ISSN 1314-2704; ISBN: 978-619-7408-36-2. htttp://www.scopus.com./sourceid/21100274701 Q4 (0.0220).

Abstract: The determination and modelling of the territory is common scientific instrument for presentation of the state of the nature and human systems. The present research is based on the

morphological and hydrological peculiarities in the river catchment. It observed of the Danube coastal zone in Bulgaria sector of the river. The differentiation and determination of the coastal area is key element in the process of the management of the territory and development of the regions. The general results of the research are related with differentiation and determination of the Danube coastal zone in Bulgaria, based on morphographic peculiarities of the region. The key element of the investigation is outlining of the south border line of the coastal zone.The second aspect of the investigation is generation of basic spatial model of the Danube coastal zone in Bulgaria. Using and applying GIS technologies is leading part of the research. Geographical and geospatial analysis of the coastal zone give opportunities for determination of three basic substructures - lowlands, regions of river mouths, including flooding areas and plateaus. They are base for the differentiation and classification of the landscape diversity of the region. Landscape diversity of the coastal zone can be used for the determination of the general directions in the development of the region.The clear definition and determination of coastal zone is important stage in the process of evaluation of the potential of Danubian region in Bulgaria. The applying aspects of the research are related with sustainable use of the recourses and nature protection in the regions. The results of the research can be use in the decision-making processes and management of different activities and politics in the region.

Mateeva, Z., G. Zhelezov. 2021. The Climatic Risk Assessment: Methodological aspects and an Example from Bulgaria. Сб. от научна конференция „Климат, атмосфера и водни ресурси в условията на климатични промени“. Том 3/2021. Трета научна конфернция 14-15 Октомври 2021. Редактори: Т. Орехова, Е. Бъчварова, Я. Чапанов, Е. Бурназки. ISSN: 2683-0558.

Abstract. Climate change is already a sustainable and ubiquitous phenomenon, affecting all biotic and abiotic elements of nature, as well as all the social, economic and political parameters of life. The impacts and corresponding consequences of climate change can have both societal and personal dimensions. Mitigating of these impacts, and of climate change itself, and adapting to the change, requires a precise assessment of the vulnerabilit to climate change - the exposure and sensitivity to them, and the preparedness to deal with them. These categories form the basis of the concept of "climate risk" and are the subject of this research. It traces their definitions and approaches for their assessment, supporting them with an example of climate risk assessment for Bulgaria.

Железов, Г., В. Стоянова. 2021. Измения на земното покритие на Арчаро-Орсойската низина за периода 1990-2018. Сб. от Седемнадесетата международна научна конференция "Космос, Екология, Сигурност" – SES. ISSN 2603 – 3313 (Print); 603 – 3321 (Online), pp. 186-191.

Abstract: The issue of studying and mapping the land cover has acquired a multifaceted practical application and relevance in recent decades. The European Commission launched the first land mapping for the European Union in 1985 with the Coordination of Environmental Information (CORINE) program. The initial data from CORINE date from 1990 and have updates in 2000, 2006, 2012 and 2018. The study presents the changes in land cover for the period 1990-2018 in the Archaro-Orsoy lowland, between the villages of Dobri dol, Slivata and Orsoya. Transformations and changes have been established at the level of the CORINE Land Cover (CLC) data classification and organization system. Eleven classes have been identified in the study areas. The largest area is occupied by the class of arable land due to fertile soils, followed by forests and pastures.

Железов, Г., Възможности за развитие на туризъм в община Чипровци в новите условия. Annual international scientific conference "Contemporary Tourism Challenges". Велико Търново. 2022 /под печат/.

Abstract: The article investigates the potential opportunities for tourism development in the upper part of the Ogosta River, Chiprovtsi Mountain and Chiprovtsi Municipality. The natural resources, the cultural and historical heritage and the history of the region are analyzed. The author made some recommendations for the process of tourism development.

Железов, Г., Хидрохимични особености на водосбора на река Лом, Северозападна България. Симпозиум „Образование, география и културен туризъм". Велико Търново. 2022 /под печат/.

Abstract: The investigations of the waters are key studies related with evaluation of the ecological state of the environment. The region of the Lom river catchment is study area of the present research. It is focused on the state of the pollution of different parameters, determining the water quality. The results can be used in the implementation of potential strategies for sustainable development in the region.

Zhelezov, G., V. Stoyanova. 2022. Spatial modeling of the landscape diversity in the river Lom catchments, Northwestern Bulgaria. Proceeding of the International conference on Cartography and GIS, Nessebar 20-25.06.2022 /под печат/.

Abstract: The aim of this study is GIS-based spatial modeling of the landscape diversity in the Lom river catchments, Northwestern Bulgaria. The investigation of the present status of the landscape diversity and the compilation of landscape maps of the studied areas have been a key problem in geographical and ecological research during the last decade. The research is based on the two classification systems of the landscapes applying in Bulgaria. The investigation results and generated landscape map give a basic structure of the landscape diversity in Lom river catchments. The landscape diversity differentiated on hydrophyte, plate, semi mountain, and high mountain landscapes, which are presented by the spatial model.

Todorov, Al., G. Zhelezov. 2022. Geoinformation technologies possibilities for web-based maps and navivation applications development. Proceeding of the International conference on Cartography and GIS, Nessebar 20-25.06.2022 /под печат/.

Abstract: At present geoinformatics usage has got global penetration in many industries and areas, including, spatial and environmental modeling, urban planning and land use management, agriculture, healthcare, insurance, military sector, automotive sector, transport and logistics, telecommunications and media, economic and business analysis, and many others. However, navigation systems developments are one of the benchmark aspects of the geoinformatics, used by billions of peoples every day via different apps and screens. At the very core of a navigation system stays a digital map. Focus of the article is the map making process in digital environment by the example of HERE Technologies, as well as and the digital maps usage as a base for some of the HERE Technologies derivative products in the areas of automotive, transport and logistics, supply chain and infrastructure planning. Special attention is given to the initial source of information and data quality.Separately it will be presented the HERE Bulgarian map in the context of the HERE global map.