

## Chief Assist. Ekaterina Ivanova, PhD

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Dr. Ekaterina Ivanova is currently Chief Assistant Professor of Remote Sensing of the Earth and Planets in the Department of Space Information at Space Research and Technology Institute, Bulgarian Academy of Sciences, Sofia, Bulgaria. She obtained his Bachelor degree in geography (2004) and Master degree in Geomorphology (2006) from Sofia University "St. Kl. Ohridski", Faculty of Geology and Geography.

Ekaterina Ivanova received his Ph.D. degree in Earth Sciences (Geomorphology and Paleogeography) from Sofia University "St. Kl. Ohridski", Faculty of Geology and Geography in 2011 with a PhD thesis entitled "Evolution

of the relief in the eastern parts of the Ograzhden and Maleshevska mountains during the Neogene and Quaternary".

Ekaterina Ivanova was appointed to the Department of Aerospace Information at Space Research and Technology Institute - BAS in 2010. After brief stints as a geographer, she was promoted to Assistant Professor in 2012.

Current research in the Ekaterina's lab emphasizes the application of remote sensing methods and Geographic Information Systems (GIS) in research and assessment of the impact of climate change and anthropogenic activity on the environment, ecosystems and sustainable development, including: Earth observation and satellite image processing, spatial analysis, digital mapping, geostatistical analysis and modeling. Ekaterina Ivanova also works in the research fields of geomorphology and natural hazards.

Dr. Ekaterina Ivanova is an author and co-author of 24 peer-reviewed research papers with over 60 independent citations (h-index = 6; July 2024) and 16 scientific reports presented at national and international conferences. She participated in the teams of 7 scientific and scientific-applied projects.

## Participation in scientific and scientific-applied projects

1. "Information Complex for Aerospace Monitoring of the Environment" (ICASME) – Contract BG161PO003-1.2.04-0053-C0001 under OP „Development of the Competitiveness of the Bulgarian Economy 2007-2013”, procedure BG161PO003-1.2.04 „Development of Applied Studies in Bulgarian Research Organizations”
2. "Joint research with aim of practical application for preservation of the natural resources and environment in the border region between the municipalities Pehchevo and Simitli" 2007SV16IP O 0007-2011-2-106, funded by the "Cross-border Cooperation Bulgaria - Macedonia 2007 - 2013"
3. "Increasing the qualification of PhD students and young scientists in the field of monitoring of natural disasters and phenomena associated with space weather", Contract BG 051PO001 – 3.3.06 – 0051, Operational Program "Human Resources Development", "European Social Fund", July 2013/October 2015.
4. „The mountain – models of socio-economic and cultural development. Prospects for regional policies and cross-border cooperation“ – "National, European, and Civilizational Dimensions of the Culture - Language - Media Dialogue" Program of the "Alma Mater" University Complex in the Humanities at Sofia University "Saint Kliment Ohridski", funded by the Bulgarian Ministry of Education and Science - Bulgarian Science Fund, 2016 (Number and date of signing the contract: ДУHK01-1/22.12.2009).
5. „An assessment of contemporary geomorphological processes (erosion-denudation) in Ograzhden, Maleshevska and Vlahina mountains and their impact on land use changes“, Bulgarian-Macedonian cross-border project for bilateral scientific and technological cooperation funded by the Bulgarian Ministry of Education and Science - Bulgarian Science Fund, 2007–2009.
6. "Paleogeographic development of the Strumeshnitsa River valley during the Neogene and Quaternary", funded by Sofia University "Saint Kliment Ohridski", University Science Fund, 2008.
7. „The role of exogenous morphodynamic processes in the development of the relief in the Ograzhden and Maleshevska mountains ", funded by Sofia University "Saint Kliment Ohridski", University Science Fund, 2007.

## Scientific publications

1. Ivanova E., 2023. Water-related Natural Hazard Assessment: A GIS-based Methodology for the Rhodope Mountain Range in Bulgaria. Proceedings of the Nineteenth International Scientific Conference „Space, Ecology, Safety - SES 2023”, 24-26 October 2023, Sofia, Bulgaria, 230–236, p-ISSN: 2603–3313 e-ISSN: 2603–3321.
2. Ivanova E., Myronidis D., 2022. Application of an integrated methodology for spatial classification of the environmental flow in the Bulgarian-Greek Rhodope Mountain Range. *International Journal of Sustainable Agricultural Management and Informatics*, 8(1), 84-103. ISSN 2054-5819 (Print), ISSN 2054-5827 (Online), DOI: <https://doi.org/10.1504/IJSAMI.2022.123045>.
3. Ivanova E., 2021. Quantitative Modeling of the Carbon Stock in the Forest Ecosystems of Bulgaria. Proceedings of the Seventeenth International Scientific Conference „Space, Ecology, Safety - SES 2021”, 20-22 October 2021, Sofia, Bulgaria, 230–236, p-ISSN: 2603–3313 e-ISSN: 2603–3321.
4. Myronidis D., Ivanova E., 2020. Generating Regional Models for Estimating the Peak Flows and Environmental Flows Magnitude for the Bulgarian-Greek Rhodope Mountain Range Torrential Watersheds. *Water* 2020, 12(3), 784. ISSN 2073-4441 (Online) DOI: <https://www.mdpi.com/2073-4441/12/3/784>
5. Ivanova E., Myronidis D., 2020. A Spatial Interpolation Approach for Environmental Flow Assessment in Bulgarian-Greek Rhodope Mountain Range. Proceedings of the 9th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2020), Thessaloniki, Greece, September 24-27, 2020. CEUR Workshop Proceedings (CEUR-WS.org), urn:nbn:de:0074-2761-0, 274–285. ISSN 1613–0073
6. Hristova N., Ivanova E., 2018. Assessment and geography of annual streamflow for 2000/2001 in Bulgaria. *Annual of Sofia University “St. Kliment Ohridski”, Faculty of Geology and Geography, Book 2: Geography, Vol. 110*, pp. 39–51. ISSN 0324-2579 (print), ISSN 2535-0579 (online) [in Bulgarian].
7. Koulov B., Ivanova E., Borisova B., Assenov A., Ravnachka A. (2017) GIS-based Valuation of Ecosystem Services in Mountain Regions: A Case Study of the Karlovo Municipality in Bulgaria. *One Ecosystem 2*: e14062, ISSN 2367-8194, DOI: <https://doi.org/10.3897/oneeco.2.e14062>
8. Hristova N., Ivanova E., Seimenov K., 2017. Geographical Aspects of Floods in Northwest Bulgaria. *KNOWLEDGE - International Journal, Institute of Knowledge Management*, 16.2, 907–914, ISSN 1857-923X
9. Ivanova E., Koulov B., Borisova B., Assenov A., Vassilev K., 2016. GIS-based Valuation of Ecosystem Services in Mountain Regions: A Case Study of the Chepelare Municipality in Bulgaria. *European Journal of Sustainable Development*, 5(4), 335–346, ISSN 2239-5938 (Print) , ISSN 2239-6101 (Online), DOI: <https://doi.org/10.14207/ejsd.2016.v5n4p335>

10. Assenov A., Vassilev K., Padeshenko H., Koulov B., Ivanova E., Borisova B., 2016. Research of the Biotope Diversity for the Purposes of Economic Valuation of Ecosystem Services in Chepelare Municipality (The Rhodopes Region of Bulgaria). *European Journal of Sustainable Development*, 5(4), 409–420, ISSN 2239-5938 (Print), ISSN 2239-6101 (Online) DOI: <https://doi.org/10.14207/ejsd.2016.v5n4p409>
11. Milevski I., Ivanova E., 2016. GIS and RS-based modelling of potential natural hazard areas in mountains – case study: Vlahina Mountain. In: *Sustainable Mountain Regions: Challenges and Perspectives in Southeastern Europe*, B. Koulov (Ed.), G. Zhelezov (Ed.), Chapter 14, Springer International Publishing Switzerland 2016, pp. 191–204, ISBN 978-3-319-27903-9, ISBN 978-3-319-27905-3 (eBook), DOI: <https://doi.org/10.1007/978-3-319-27905-3>
12. E. Ivanova, 2014. Landslide Susceptibility Mapping using Frequency Ratio and Analytic Hierarchy Process (AHP): Comparative study of two areas in Bulgaria. *Proceedings of the International Conference “Analysis and Management of Changing Risk for Natural Hazards”*, 18–19 November, 2014, Padua, Italy, pp. AP23-1–AP23-9, ISBN 9788867873074
13. Ivanova E., Milevski I., 2014. Landslide Susceptibility Mapping of the Territory of Municipalities Pehchevo and Simitli by Means of GIS Modeling. *Proceedings of the Ninth Scientific Conference with International Participation “Space, Ecology, Safety” (SES-2013)*, Sofia, 434–443, ISSN 1313–3888
14. Milevski I., Ivanova E., 2014. Erosion potential modeling of the territory of municipalities Pehchevo and Simitli using Remote Sensing Data. *Proceedings of the Ninth Scientific Conference with International Participation “Space, Ecology, Safety” (SES-2013)*, Sofia, pp. 444–450, ISSN 1313–3888
15. Ivanova E., Nedkov R., Ivanova I., Radeva K., 2012. Morpho-hydrographic analyze of Black Sea Catchment Area in Bulgaria. *Procedia Environmental Sciences*, 14, 143–153, Elsevier, ISSN 1878-0296, DOI: <https://doi.org/10.1016/j.proenv.2012.03.014>
16. Lyubenova M., Nedkov R., Ivanova I., Georgieva N., Ivanova E., Lyubenova V., 2012. Ecological space modeling as a pattern for forest vegetation investigation (example with Belasitsa Mt., Bulgaria). *Comptes rendus de l'Academie bulgare des Sciences*, 65(4) 483–490. ISSN 1310–1331 (Print), ISSN 2367–5535 (Online)
17. Cholakova Z., Avetisyan D., Ivanova E., Nedkov R., 2012. Contemporary landscapes and their anthropogenic stage in part of the Upper Lom River Basin, mapped by GIS on the base of GPS, satellite and ground data. *Ecological Engineering and Environment Protection*, Issue 4/2012, pp. 4–12. ISSN 1311-8668 [in Bulgarian].
18. Lubenova M., Nedkov R., Ivanova I., Shikalanov A., Georgieva N., Zaharinova M., Dimitrova M., Ivanova E., Yanchev V., Radeva K., Stankova N., Tsoneva R., 2011. Study on ecological dynamics of forest vegetation in the region of East Rhodopi on the base of satellites, GPS and ground data. *Ecological Engineering and Environment Protection*, Issue 1/2011, pp. 45–51, e-ISSN 2367-8429

19. Kirilova S., Nedkov R., Modev S., Radeva K., Ivanova E., 2011. Ecohydrological monitoring on the river Maritsa basin, limited from sources to Belovo city, using GIS on the base of satellite, GPS and ground data. *Ecological Engineering and Environment Protection*, Issue 4/2011, pp. 5–13. ISSN 1311-8668 [in Bulgarian].
20. Ivanova E., Nedkov R., 2010. Research of risky morpho-dynamic processes in the region of Ograzhden and Maleshevo mountains on the base of satellite and GPS data. *Ecological Engineering and Environment Protection*, Issue 1/2010, pp. 17–24. ISSN 1311-8668 [in Bulgarian].
21. Ivanova E., 2009. Negative erosion processes on the south-west slopes of Ograzhden Mountain (Bulgaria and Macedonia). *Proceeding of Scientific Symposium with International Participation "Geography and Sustainable Development"*, Macedonian Geographical Association, Ohrid, pp. 81–88, ISBN 978-608-65155-0-8
22. Ivanova E., 2009. Geomorphological research in Ograzhden Mountain on the territory of Bulgaria. *Annual of Sofia University "St. Kliment Ohridski", Faculty of Geology and Geography, Book 2: Geography, Vol. 110*, pp. 69–89. ISSN 0324-2579 [in Bulgarian].
23. Ivanova E., Baltakov, G., Milevski, I., 2009. Hydrographic and morphogenetic researches of valley of Lebnitsa River on the territory of Bulgaria and Macedonia. *Geographical reviews, Tome 43*, Macedonian Geographical Association, Skopje, pp. 41–52, ISSN 1409-908X
24. Ekaterina Ivanova, 2008. Erosion of soils and the ground desertification in Southwest Bulgaria (Ograzhden and Maleshevo mountains). *Proceedings of the Bulgarian Geological Society "Geosciences 2008"*, 127–128, ISSN 1313-2377