Scientific contributions

dr. Andrei Dornik

Research articles in Web of Science

1. **Dornik A.**, Cheţan M-A., Crişan T.E., Heciko R., Gora A., Drăguţ L., Panagos P., 2024, *Geospatial evaluation of the agricultural suitability and land use compatibility in Europe's temperate continental climate region*, ***International Soil and Water Conservation Research*** (IF 7.3; AIS 1.371; **Q1**), https://doi.org/10.1016/j.iswcr.2024.01.002

2. **Dornik A.**, Cheţan M-A., Drăguţ L., Iliuţă A., Dicu D.D., 2022, *Importance of the mapping unit on the land suitability assessment for agriculture*, ***Computers and Electronics in Agriculture*** (IF 8.3; AIS 1.049; **Q1;** Rank **1/58** in AGRICULTURE, MULTIDISCIPLINARY), 201: 107305, https://doi.org/10.1016/j.compag.2022.107305

3. **Dornik A.**, Cheţan M-A., Drăguţ L., Dicu D.D., Iliuţă A., 2022, *Optimal scaling of predictors for digital mapping of soil properties*, ***Geoderma*** (IF 6.1; AIS 1.221; **Q1**), 405:115453, 10.1016/j.geoderma.2021.115453

4. **Dornik A.**, Drăguţ L., Oguchi T., Hayakawa Y., Micu M., 2022, *Influence of sampling design on landslide susceptibility modeling in lithologically heterogeneous areas*, ***Scientific Reports*** (IF 4.6; AIS 1.129; **Q2**), 12:2106, https://doi.org/10.1038/s41598-022-06257-w

5. **Dornik A.**, Ion M. C., Cheţan M-A., Pârvulescu L., 2021, *Soil-Related Predictors for Distribution Modelling of Four European Crayfish Species*, ***Water*** (IF 3.53; AIS 0.523; **Q2**), 13:16, 2280, https://doi.org/10.3390/w13162280

6. Cheţan, M-A., **Dornik, A.**, 2021, *20 years of landscape dynamics within the world's largest multinational network of protected areas*, ***Journal of Environmental Management*** (IF 8.910; AIS 1.115; **Q1**), 280, 111712, https://doi.org/10.1016/j.jenvman.2020.111712

7. Cheţan, M-A., **Dornik, A.**, Ardelean, F., Georgievski, G., Hagemann, S., Romanovsky, V.E., Onaca, A., Drozdov, D.S., 2020, *35 Years of Vegetation and Lake Dynamics in the Pechora Catchment, Russian European Arctic*, ***Remote Sensing*** (IF 4.848; AIS 0.933; **Q1**), 12:11, 1863, https://doi.org/10.3390/rs12111863

8. Ardelean, F., Onaca, A., Cheţan, M-A., **Dornik, A.**, Georgievski, G., Hagemann, S., Timofte, F., Berzescu, O., 2020, *Assessment of Spatio-Temporal Landscape Changes from VHR Images in Three Different Permafrost Areas in the Western Russian Arctic*, ***Remote Sensing*** (IF 4.848; AIS 0.933; **Q1**), 12:23, 3999, https://doi.org/10.3390/rs12233999

9. **Dornik, A.**, Drăguţ, L., Urdea, P., 2018, *Classification of Soil Types Using Geographic Object-Based Image Analysis and Random Forest*, ***Pedosphere*** (IF 3.188; AIS 0.559; **Q2**), 28:6, 913-925, https://doi.org/10.1016/S1002-0160(17)60377-1

10. Cheţan, M-A., **Dornik, A.**, Urdea, P., 2018, *Analysis of recent changes in natural habitat types in the Apuseni Mountains (Romania), using multi-temporal Landsat satellite imagery (1986–2015)*, ***Applied Geography*** (IF 3.068; AIS 0.859; **Q1**), 97, 161-175, https://doi.org/10.1016/j.apgeog.2018.06.007

11. **Dornik, A.**, Drăguţ, L., Urdea, P., 2016, *Knowledge-based soil type classification using terrain segmentation*, ***Soil Research*** (IF 1.606; AIS 0.455; **Q3**), 54:7, 809-823, https://doi.org/10.1071/SR15210

12. Drăguţ, L., **Dornik, A.**, 2016, *Land-surface segmentation as a method to create strata for spatial sampling and its potential for digital soil mapping*, ***International Journal of Geographical Information Science*** (IF 2.5; AIS 0.584; **Q1**), 30:7, 1359-1376, https://doi.org/10.1080/13658816.2015.1131828

Books

1. **Dornik, A.**, 2017, Analiza geografică orientată-obiect pentru cartografierea digitală a solurilor în sud-vestul României, *Editura Universităţii de Vest*, ISBN: 978-973-125-566-8, 214 p.

Other research articles/contributions

1. Cheţan, M., A., **Dornik, A.**, Urdea, P., 2017, Comparison of Object and Pixel-based Land Cover Classification through three Supervised Methods, *ZFV - Zeitschrift fur Geodasie, Geoinformation und Landmanagement*, 142(5):265, **DOI**: 10.12902/zfv-0165-2017

2. **Dornik A.**, Draguţ L., Chetan M. A., Oguchi T., Hayakawa Y., Micu M., 2021, Towards a consistent set of land-surface variables for landslide modelling, *Extended abstract, Geomorphometry Conference Proceedings*, Perugia, Italy, DOI: 10.30437/GEOMORPHOMETRY2020_44

3. Drăguţ, L., **Dornik, A.**, 2013, Evaluation of land-surface segmentation as support for soil sampling, *Extended abstract, Geomorphometry Conference*, Nanjing, China.

Research projects and grants

Director

2020-2022, *Director / Postdoctoral researcher*, Project: **A digital framework for assessing land suitability to crops and land use**, UEFISCDI, PN-III-P1-1.1-PD-2019-0402, Project acronym: LS-GIS

Member

2025, *Researcher*, Project: Extinderea infrastructurii naţionale participantă la segmentul de sol colaborativ European (COLGS-RO), UEFISCDI, PN-IV-P6-6.3-SOL-2024-2-0248

2020, *Postdoctoral researcher,* Project: **Study of the development of extreme events over permafrost areas,** Ministry of Research and Innovation and CNCS – UEFISCDI within ERANET, Project number ERANET-RUS-PLUS-SODEEP, Project acronym: SODEEP

2019, *Postdoctoral researcher,* Project: **Semi-automated object-oriented landslide mapping,** CNCS – UEFISCDI, PN-III-P4-ID-PCE-2016-0222.

Other projects

2019, *Lector*, Project: **Dezvoltare instituţională prin internaţionalizare pentru toţi la Universitatea de Vest din Timişoara**, CNFIS-FDI-2019-0108.

2016, *Cartographer*, Project: **Strategia de dezvoltare a oraşului Jimbolia**.

Contributions at international scientific conferences

1. **Dornik A.**, Cheţan M.A., Crişan T.E., Heciko R., Gora A., Drăguţ L., Panagos P., 2024, Assessing environmental limitations of agricultural suitability in Europe's temperate continental climate region: a geospatial evaluation, *ESA Symposium on Earth Observation for Soil Protection and Restoration*, 6-7 March 2024, Frascati, Italy

2. **Dornik A.**, Cheţan M.A., Crişan T.E., Heciko R., Gora A., Drăguţ L., Panagos P., 2023, Mapping land suitability for agriculture in Europe's humid continental climate, *Wageningen Soil Conference 2023*, August 28 - September 1, Wageningen, the Netherlands

3. **Dornik A.**, Cheţan M.A., Drăguţ L., Iliuţă A., Dicu D.D., 2023, Digital mapping of soil properties with optimally scaled predictors, *European Geosciences Union 2023*, 23-28.04.2023, Vienna, Austria

4. **Dornik A.**, Cheţan M.A., Drăguţ L., Iliuţă A., Dicu D.D., 2023, Delineation of mapping units for land suitability assessment using land-surface parameters, *Geomorphometry2023*, July 10 – 14, Iasi, Romania

5. Oguchi T., Dragut L., Hayakawa Y.S., Micu M., **Dornik A.**, Sirbu F., Iizuka K., Ionita A., Lungu M., Kasai M., Chetan M., 2023, Japan–Romania collaborative research on landslides and terrain analysis, *Regional Conference on Geomorphology Cappadocia,* 12-14 September 2023

6. **Dornik A.**, Cheţan M.A., Drăguţ L., Dicu D.D., Iliuţă A., 2022, Digital rating of land suitability to crops and land use in Romania, *22nd World Congress of Soil Science (WCSS 2022)*, 31 July – 5 August 2022, Glasgow, UK

7. **Dornik A.**, Cheţan M.A., Drăguţ L., Iliuţă A., Dicu D.D., 2022, Geographic Object-Based Image Analysis to delineate mapping units for land suitability assessment, *The Fourteenth International Conference on Advanced Geographic Information Systems, Applications, and Services - GEOProcessing 2022*, June 26-30, Porto, Portugal

8. **Dornik A.,** Cheţan M.A., Drăguţ L., Dicu D.D., Iliuţă A., 2021, Importance of multiscale predictors for digital mapping of soil properties, *THE 2nd INTERNATIONAL CONFERENCE: GEOGRAPHICAL SCIENCES AND FUTURE OF EARTH, GeoEarth 2021*, November 22, Bucharest, Romania

9. **Dornik A.**, Cheţan M.A., Drăguţ L., Iliuţă A., Dicu D.D., 2021, Optimal Scaling of Predictors for Digital Mapping of Soil Properties, *The Thirteenth International Conference on Advanced Geographic Information Systems, Applications, and Services, GEOProcessing 2021*, July 18-22, Nice, France

10. **Dornik A.**, Draguț L., Chetan M. A., Oguchi T., Hayakawa Y., Micu M., 2021, Towards a consistent set of land-surface variables for landslide modelling, *Geomorphometry Conference*, September 13-17, Perugia, Italy

11. Chetan M, **Dornik A**, 2020, Analysis of human impact within Natura 2000 protected areas using remote sensing data, *SPIE Remote Sensing Digital Forum 2020*, 21 - 25 September 2020

12. Ardelean F., Onaca A., **Dornik A.**, Cheţan M., 2020, Assessment of spatio-temporal landscape changes from VHR satellite images in three different permafrost areas from West Siberia, *22nd International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, Timișoara, 01-04.09.2020

13. **Dornik A.,** Drăguţ L., Oguchi T., Hayakawa Y., Micu M., 2020, Altitude as an indicator of biased sampling design in landslide prediction, *EGU2020: Sharing Geoscience Online*, 04-08.05.2020

14. Cheţan M., **Dornik A.,** 2020, 20 years of forest change in Natura 2000 protected areas network, *EGU2020: Sharing Geoscience Online*, 04-08.05.2020

15. Ardelean F., Cheţan M., **Dornik A.**, Onaca A., Georgievski G., Drozdov D., Romanovsky V., Hagemann S., Nicolsky D., Sein D., 2020, Recent landscape changes assessed by remotely sensed data in Pechora Region, *EGU2020: Sharing Geoscience Online*, 04-08.05.2020

16. Georgievski G., Hagemann S., Sein D., Drozdov D., Gravis A., Romanovsky V., Nicolsky D., Onaca A., Ardelean F., Cheţan M., **Dornik A.**, 2020, Climate extremes relevant for permafrost degradation, *EGU2020: Sharing Geoscience Online*, 04-08.05.2020

17. Ardelean, F., **Dornik, A.**, Cheţan, M., Onaca, A., 2019, Assessment of recent vegetation changes in permafrost areas from West Siberia using Google Earth Engine, *"Geographia Napocensis" Conference*, Cluj-Napoca, Romania, 03-06.10.2019

18. Cheţan, M., Ardelean, F., **Dornik, A.**, Onaca, A., Berzescu, O., Hegyi, A., 2019, Assessing landscape changes using Google Earth Engine in different permafrost areas from West Siberia, *21st International Symposium on Symbolic and Numerical Algorithms for Scientific Computing (SYNASC)*, Timișoara, 04-07.09.2019

19. Onaca, A., Ardelean, F., Cheţan, M., **Dornik, A.**, Hegyi, A., Urdea, P., 2019, Quantifying recent landscape changes using multi-temporal satellite images in permafrost areas from Western Siberia, *17th International Symposium on Geo-disaster Reduction*, 19-23.08.2019, Issyk Kul, Kyrgyzstan

20. **Dornik A.**, Cheţan M., Drăguţ L., Cacovean H., 2019, A geographic information system for assessing the suitability of Romanian land to crops and land use, *United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming*, Cluj-Napoca, Romania, 06-10 May

21. Ion, C.M., **Dornik A.**, Pârvulescu L, 2018, Are Soil Properties Good Predictors in Distribution Modelling for Three European Crayfish?, *International Association of Astacology (IAA) 22th Symposium*, Pittsburgh, USA, 9-13 July

22. **Dornik A.**, Cheţan, M.A., 2018, Soil type mapping using geographic object-based image analysis, *Soil Classification and Education Conference,* Toruń, Poland, 18-20 May

23. Keshavarzi A., **Dornik A.**, Bottega E. L., Rodrigo-Comino J., 2018, Comparison of Statistical and Geostatistical Methods to Assess the Soil Pollution in Iran: A Critical Review, 4th International Conference on Environmental Engineering, May 2018, Teheran, Iran.

24. Cheţan, M.A., **Dornik, A.**, 2017, Recent changes of habitat types in the Natura 2000 site Apuseni-Vlădeasa Mountains, *3rd Workshop on Geoinformatics, 19th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2017)*, September 21 – 24, Timisoara, Romania.

25. **Dornik, A.**, 2016, A new methodology for digital soil mapping using geographic object-based image analysis and Random Forests, *European Society for Soil Conservation Conference "Soil - Our Common Future"*, June 15-18, Cluj-Napoca, Romania.

26. **Dornik, A.**, 2015, A comparison of pixel-based and geographic object-based image analysis for the classification of soil types, *1st Workshop on Geoinformatics in the framework of SYNASC 2015, 17th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing*, September 21 – 24, 2015, Timisoara, Romania.

27. **Dornik, A.**, 2015, Object based image analysis and data-driven techniques for soil type mapping, *Methodological challenges in Geography, International Conference of Geography,* 15-16 May 2015, Timisoara, Romania.

28. **Dornik, A.**, Drăguţ, L., Urdea, P., 2014, An object-oriented methodology based on expert-knowledge for soil type prediction, *1st Workshop on GIS and Hydrologic Modeling in the framework of 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing*, 22-25 September 2014, Timisoara, Romania.

29. Drăguţ, L., **Dornik, A.**, 2013, Land-Surface Segmentation as sampling framework for soil mapping, *Geomorphometry 2013 Conference*, October 16-20, 2013, Nanjing, China.

30. Drăguţ, L., Csillik, O., Ardelean, F., **Dornik, A.**, 2012, Partitioning a DEM into fundamental surface elements with land-surface segmentation, IAG/AIG International Workshop on *"Objective Geomorphological Representation Models: Breaking through a New Geomorphological Mapping Frontier",* Salerno, Italia, 15 – 19 octombrie 2012.

31. Drăguţ, L., Csillik, O., **Dornik, A.**, Ardelean, F., Zisu, I., 2012, Fundamental surface elements on digital elevation models, 2nd Forum Carpaticum *"From data to knowledge, from knowledge to action",* Stara Lesna, Slovacia, 30 mai – 2 iunie 2012.

32. Drăguţ, L., Csillik, O., Zisu, I., **Dornik, A.**, Ardelean, F., 2012, Fundamental surface elements on digital elevation models, GIS Ostrava 2012 „*Surface models for geosciences*", Ostrava, Cehia, 23 – 25 ianuarie 2012.

33. Zisu, I., **Dornik, A.**, 2014, Lugoj Hills agricultural land quality and its current utilization, *International Conference, Academic Geography of Timisoara at the 55th Anniversary*, 16-17 May 2014.

Contributions at national scientific conferences

1. Drăguţ, L., **Dornik, A.**, Zisu, I., 2012, Comparație între performanţele analizelor bazate pe celule şi pe obiecte, pentru optimizarea procesului de eşantionare, în scopul predicției texturii solului, a-XX-a Conferinţă Naţională de Ştiinţa Solului *„Starea de calitate a resurselor de sol şi protecţia mediului în oltenia",* Craiova, România, 26 august – 1 septembrie 2012.

2. Drăguţ, L., Ardelean, F., Csillik, O., **Dornik, A.**, Zisu, I., 2012, Elemente fundamentale ale suprafețelor Modelelor Digitale de Elevație, Simpozionul Național de Geomorfologie*,* Baru, România, 14 – 17 iunie 2012.