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**Areas of competence:** theoretical geography; research methodology in geography, dynamic and applied geomorphology; assessment of hazards and geographical risks; resources, environment and territorial development issues.

**Research topics:**

1. **Geographical theory and nonlinear dynamics of geographic systems**

Significant works: *Transience and its implications in the development of geographical processes* (collab. I. Mac), in ro., 1994, Studia Universitatis Babeş-Bolyai, Geographia, no. 2, Cluj-Napoca, pp. 23-38; Thresholds of substance, energy and information in geomorphological systems, in ro., 1998, University of Oradea Publishing House, pp. 223; *Implications of the spatio-temporal frame of reference in the perception of geomorphological dynamics* (collab. Rodica Petrea), in ro.,1998-1999, Studii și Cercetări în Geografie, Volume XLV-XLVI, Romanian Academy Publishing House, pp. 71-78; *Polysemy of extreme geographical events* (collab. I. Mac,), in ro., 2002, in vol. Riscuri și Catastrofe, editor, V. Sorocovschi, House of Science Book, Cluj-Napoca, 11-24; *Geography-Semiological approach* (collab. I. Mac), in ro., 2001, Studia Universitatis Babeş-Bolyai, no. 2, Geographia, Cluj-Napoca, pp.3-12; *The integrated approach in Geography between tradition and actuality*, in ro., 2002, Studia Universitatis Babeş-Bolyai, no. 1, Geographia, Cluj-Napoca pp. 9-19.

1. **Dynamic geomorphology, applied geomorphology and geoarchaeology**

Significant works: *Geoarchaeologic and paleopedologic evidences for the holocene paleoenvironmental evolution of the Crisuri Plain (Western Romania)* collab. Dumitrașcu S. Josan N. 2007, Physio-Geo-Online Journal of Physical Geography and Environment, Vol I. pp. 95-106; *Deep-seated landslides (glimee) in the Saschiz and Soard-Secuieni area* (collab. Surdeanu V., Rus I., Irimuș I.A.), 2008, Landslide floods and global environmental change in mountain area, University Press, Editor: Dan Balteanu, pp. 28-32; *Spatial plan restructurings occurred in the recent evolution of the Crisului Repede riverbed between Ciucea and Oradea* (collab. I. Rus), 2008, Revista de Geomorfologie, AGR Bucharest, vol. 8., 35-45 pp; *Dendrogeomorphological reconstruction of past debris flow activity along a forested torrent (Retezat Mountains,* (collab. Văidean Roxana), 2014, Revista de Geomorfologie, 16: 17-24; *Natural Landscape of the researched area in Landscape Archeology on the northern frontier of the Roman Empire at Porolissum* (collab. Vescan I., Bilașco Șt., Tanțău I.), 2016, editors: Coriolan H. Opreanu, Vlad-A. Lăzărescu, Mega Publishing House, Cluj Napoca (19-31), pp. 353.

1. **Assessment of natural hazards and risks induced at territorial level**

Significant works: *The determination of the landslide occurrence probability by GIS spatial analysis of the land morphometric characteristics (case study: The Transylvanian Plateau),* collab. Bilasco, S., Roșca, Sanda-Maria, Vescan, I., Fodorean, I, 2014, Science\_Citation\_Expanded, Carpathian Journal of Earth and Environmental Sciences, 9, No. 2, pp. 91 - 102; *Comparative assessment of landslide susceptibility. Case study: the Niraj river basin (Transylvania depression, Romania)*, (colab. Roşca Sanda, Bilaşco Ştefan, Vescan I., Fodorean I.), 2016 Geomatics, Natural Hazards and Risk, Vol. 7, Nr. 3, pp. 1043-1064, DOI: 10.1080 / 19475705.2015.1030784; *Quantitative evaluation of the risk induced by dominant geomorphological processes on different land uses, based on GIS spatial analysis models*, (collab. Bilaşco Ştefan, Roşca Sanda, Fodorean Ioan, Vescan Iuliu, Filip Sorin,), 2018, Frontiers of Earth Science, Vol 12, no. 2, pp. 311-324, DOI 10.1007 / s11707-017-0615-6*; Application of landslide hazard scenarios at annual scale in the Niraj River basin (Transylvania Depression, Romania),* (collab. Roşca Sanda, Bilaşco Ştefan, Fodorean, I., Vescan, I., Filip, S.), 2015, Natural Hazards, DOI 10,1007 / s11069-015-1665-2: 77: 1573-1595; *National scale landslide susceptibility map of Romania in a European methodological framework*, (colab. Bălteanu D., Micu M., Jurchescu Marta, Malet J .-P., Sima Mihaela, Kucsicsa Gh., Dumitrica Cristina, Petrea DP, Mărgărint MC, Bilașco Ștefan, Dobrescu Cornelia-Florentina, Călăraşu Elena-Andreea, Olinic E., Boți I., Senzaconi F), 2020, Geomorphology, Volume 371, 107432, ISSN 0169-555X, https://doi.org/10.1016/j.geomorph.2020.107432.

1. **Resources, environment and territorial development**

Significant works: *Recent forms and evolution trends of rural tourism in the Apuseni Mountains,* in ro., 2006, in vol. Rural Tourism and sustainable development (editor Rodica Petrea), University of Oradea Publishing House, pp. 46-54; *The Brownfield from Pădurea Neagră (Crișului Repede Valley)*, (collab. Rodica Petrea), 2011, Social\_Sciences\_Citation, Abacus-A Journal of Accounting Finance and Business Studies, TRAS (Transylvanian Review of Administrative Sciences), No. 33 E / June / 2011, pp. .55 - 61M*; Strategic environmental assessment as a tool for sustainable territorial development in Romania,* (collab. Corpade, C., Corpade, Ana-Maria), 2013, in vol. La mise en oeuvre du developpement territorial durable: declinaisons franco-roumaines, editori Jean- Paul Carriere, Christophe Demaziere, Rodica Petrea, Luminita Filimon, L Harmattan, Paris, 2013, pp. 219-230; *Place Branding as Efficient Management Tool for Local Government*, (collab. Petrea, Rodica, Pale, Luminița), 2013, Social\_Sciences\_Citation, Abacus-A Journal of Accounting Finance and Business Studies, Tras (Transylvanian Review of Administrative Sciences), Special Issue, pp. 124-140; *Evaluation of the Built-Up Area Dynamics in the First Ring of Cluj-Napoca Metropolitan Area, Romania by Semi-Automatic GIS Analysis of Landsat Satellite Images*, Applied Sciences, (collab. Dolean B. E, Bilașco Șt., Moldovan SC , Vescan I., Roşca Sanda-Maria, Fodorean I.), 2020, 10 (21), 7722; <https://doi.org/10.3390/app10217722>.

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