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**Dr. Jan Blahůt** is an expert in Landslide processes and Landslide Risk Reduction. Jan is an editor for the journals Acta Geodynamica et Geomaterialia and Geoenvironmental Disasters and has acted as a reviewer for the journals Landslides, Geomorphology, NHESS, Water, Natural Hazards, Bulletin of Engineering Geology and the Environment, Journal of Mountain Science, Remote Sensing, Science of the Total Environment or Transportation Geotechnics. Jan also participates in teaching at the Charles University in Prague courses on Natural Hazards and Risks and Dynamic Engineering Geology and supervises bachelor, master and doctoral theses in Geography and Cartography, Physical Geography and Applied Geology. Since 2020 he started teaching his own lecture on Monitoring of Geodynamic Processes at the University of Ostrava, Czechia. Jan Blahůt is an expert witness named by the Minister of Justice of the Czech Republic with specialisation in Engineering Geology, Geomorphology, Stability of Slopes and Rock Walls.

## **Employment**

#### **Current position**

### Institute of Rock Structure and Mechanics, Czech Academy of Sciences, Prague, Czechia

Researcher at the Department of Engineering Geology (January 2013 – present)
Deputy Head of the Department of Engineering Geology (September 2018 – present)

#### Former positions

#### Institute of Rock Structure and Mechanics, Czech Academy of Sciences, Prague, Czechia

Head of the Department of Engineering Geology (February 2015 – August 2018)
Postdoctoral Fellow at the Dept. of Engineering Geology (September 2010 – December 2012)

Supervisors: Dr. Josef Stemberk, Prof. Jan Rybář

#### University of Milano-Bicocca, Milan, Italy

Early Stage Researcher at the Department of Environmental and Territorial Sciences – Earth Science Section (July 2007 – June 2010) within Marie Curie Research and Training Network and 6th EC Framework Programme Project: Mountain Risks: from prediction to management and governance Supervisors: Dr. Simone Sterlacchini, Prof. Thomas Glade, Prof. Cees van Westen

#### **Education**

# University of Milano-Bicocca, Faculty of Mathematical, Physical and Environmental Sciences, Department of Environmental and Territorial Sciences – Earth Science Section, Milan, Italy

PhD. in Environmental Sciences (2007-2010)

Dissertation thesis: Debris flow hazard and risk analysis at medium and local scale Supervisors: Dr. Simone Sterlacchini, Prof. Thomas Glade, Prof. Cees van Westen

# Charles University in Prague, Faculty of Sciences, Department of Physical Geography and Geoecology, Prague, Czechia

Mgr. (MSc.) in Physical Geography (2001-2006)

Master thesis: Avalanches in the Labský důl Valley, Krkonoše Mountains

Supervisor: Prof. Jan Kalvoda

### **Internships and short stays**

# Massey University, School of Agriculture and Environment, Geosciences Group, Palmerston North, New Zealand

International Visiting Reasearcher Fellowship – Applied Landslide Research (January 2020 – March 2020) Host: Dr. Sam T. McColl

United Nations University ITC School for Disaster Management (UNU-ITC), Enschede, the Netherlands

Quantitative risk assessment of landslide hazards (January 2010)

Supervisor: Prof. Cees van Westen

# University of Vienna, Geomorphic Systems and Risk Research Unit, Institute of Geography and Regional Research, Vienna, Austria

Landslide hazard and risk analysis (November 2008 – January 2009)

Supervisor: Prof. Thomas Glade

University of Lausanne, Institute of Geomatics and Risk Analysis, Lausanne, Switzerland

Landslide modelling (September 2008)
Supervisor: Prof. Michel Jaboyedoff

# International Institute for Geo-Information Science and Earth Observation ITC (ITC-ESA), Department of Earth Systems Analysis, Enschede, the Netherlands

Spatial data for landslide hazard assessment (February 2008 – March 2008)

Supervisor: Prof. Cees van Westen

### **Main Research Interests**

- Landslide monitoring
- Tectonic movement monitoring
- Spatial data analysis
- Geologic and geomorphic hazard and risk assessment

### **Research Output**

- 31 peer-reviewed publications (on WoS)
- 10 chapters in books
- 50+ other publications (book chapters, unpublished reports, abstracts, conference proceedings, etc.)
- H-index: 12 (WoS); 13/11 (Scopus); 16 (Google Scholar)
- Sum of citations: 562/474 (WoS); 637/550 (Scopus); 1020 (Google Scholar)
- ORCID: https://orcid.org/0000-0002-9969-4641
- Researcher ID: F-2843-2010

### **Research Projects**

2017-2020	Distributed System of Permanent Observatory Measurements and Temporary Monitoring of
	Geophysical Fields (CzechGeo/EPOS-Sci)
	The Ministry of Education, Youth and Sports project CZ.02.1.01/0.0/0.0/16_013/0001800, team member
2017-2020	RINGEN - Research Infrastructure for Geothermal Energy Upgrade
	The Ministry of Education, Youth and Sports project CZ.02.1.01/0.0/0.0/16_013/0001792, team member
2016-2019	Distributed System of Permanent Observatory Measurements and Temporary Monitoring of Geophysical Fields
	The Ministry of Education, Youth and Sports project LM2015079, team member responsible for SLOPENet a GEONAS monitoring networks
2016-2019	Research Infrastructure for Geothermal Energy "RINGEN"
	The Ministry of Education, Youth and Sports project LM2015084, team member
2016-2018	El Hierro megalandslide dynamics analysed using "big data" to predict the future behaviour of megalandslides on other volcanic islands
	Czech Science Foundations Junior project 16-12227Y, principal investigator
2015-2017	The development and optimisation of a prototype for the automated monitoring of three- dimensional fracture movements: a precise and robust instrument for use in fracture mechanics, civil engineering, and across the geosciences
	Technological Agency of the Czech Republic project TA04021791, team member
2014-2017	Landslide Risk Assessment and Development Guidelines for Effective Risk Reduction – World Centre of Excellence on Landslide Disaster Reduction
	International Programme on Landslides (IPL), core team member
2013-2015	Creation of information system for evaluation of avalanche hazard in mountain regions in the Czech Republic
	Ministry of Interior project VG20132015115, co-investigator
2012-2013	Mega-landslides: imminent hazard or sleeping giants? Monitoring the landslide hazard related to ongoing volcanic activity around El Hierro, Canary Islands, Spain

National Geographic Society and Waitt Grants Program project W244-12, principal investigator

**2011-2013** Impact of rainfalls on types of slope deformations: based on example in Lemešná Valley and Kání peak in Carpatian flysch

GAUK project n. 425911, co-investigator since 2012

**2010-2015** CzechGeo/EPOS – Distributed system of permanent observatory measurements and temporary monitoring of geophysical fields in the Czech Republic

Ministry of Education, Youth and Sports project LM2010008, team member (EUTecNet – European Tectonic monitoring Network), since 2012 responsible for GNSS geodynamic monitoring (GEONAS – GEOdynamic Network of the Academy of Sciences of the Czech Republic)

# **Language Skills**

- English fluent (FCE certificate)
- Spanish very good
- Italian good

### **Membership**

- Expert witness named by the Minister of Justice of the Czech Republic in the field of Mining, branch Geology, Specialisation in Engineering geology, Geomorphology, Stability of Slopes and Rock Walls
- Examination Committee for the state doctoral exams and for doctoral theses defence in doctoral study programs Geology and Applied Geology
- Examination Committee for the state exams in master study program Applied Geology
- LandAware the international network on Landslide Early Warning Systems
- Czech National Committee for Disaster Reduction (CNCDR)
- International Consortium on Landslides (ICL)
- European Geosciences Union (EGU)
- International Association of Engineering Geology and the Environment (IAEG)
- Geology and Information Technology Group, Italian Geological Society (GIT)
- Czech Association of Geomorphologists (CAG)
- Geotechnical monitoring board of the D8 motorway (RAMO)

#### **ISI Journal Papers**

- Smolíková J, Hrbáček F, Blahůt J, Klimeš J, Vilímek V, Loaiza Usuga JC (2021) Analysis of the rainfall pattern triggering the Lemešná debris flow, Javorníky Range, the Czech Republic. Natural Hazards https://doi.org/10.1007/s11069-021-04546-7
- **Blahůt J**, Olejár F, Rott J, Petružálek M (2020) Current stability modelling of an incipient San Andrés giant landslide on El Hierro, Canaries, Spain first attempt using limited input data. Acta Geodynamika et Geomaterialia, 17, 1(197):89-99. https://doi.org/10.13168/AGG.2020.0006
- Blahut J, Mitrovic-Woodell I, Baroň I, René M, Rowberry M, Blard P-H, Hartvich F, Balek J, Meletlidis S (2020) Volcanic edifice slip events recorded on the fault plane of the San Andrés Landslide, El Hierro, Canary Islands. Tectonophysics 776:228317. https://doi.org/10.1016/j.tecto.2019.228317
- Balek J, Klimeš J, Blahůt J, Štroner M, Urban R, Hartvich F (2019) Shallow landslide movements in clay rich rocks detected during subnormal percipitation period. Acta Geodynamica et Geomaterialia 16, 4(196):409-417. https://doi.org/10.13168/AGG.2019.0034
- Blahůt J, Balek J, Klimeš J, Rowberry M, Kusák M, Kalina J (2019) A comprehensive global database of giant landslides on volcanic islands. Landslides 16(10):2045-2052. https://doi.org/10.1007/s10346-019-01275-8
- Stemberk J, Dal Moro G, Stemberk J, **Blahût J**, Coubal M, Košťák B, Zambrano M, Tondi E (2019) Strain monitoring of active faults in the central Apennines (Italy) during the period 2002-2017. Tectonophysics 750:22-35. https://doi.org/10.1016/j.tecto.2018.10.033
- Rowberry M, Dubois C, Kaufmann O, Baele J-M, Blahůt J (2018) Weathering by dolomite dissolution responsible for the formation of an important paleontological locality in the Prague synform. Acta Geodynamica et Geomaterialia 15, 3(191):297-303. https://doi.org/10.13168/AGG.2018.0022

- Blahůt J, Baroň I, Sokoľ L, Meletlidis S, Klimeš J, Rowberry M, Melichar R, García-Cañada L, Martí X (2018) Large landslide stress states calculated during extreme climatic and tectonic events on El Hierro, Canary Islands. Landslides 15(9):1801-1814. https://doi.org/10.1007/s10346-018-0993-1
- **Blahůt J**, Klimeš J, Rowberry M, Kusák M (2018) Database of giant landslides on volcanic islands—first results from the Atlantic Ocean. Landslides 15(4):823-827. https://doi.org/10.1007/s10346-018-0967-3
- Rinaldi-Montes N, Rowberry M, Frontera C, Garcés J, Baroň I, Blahůt J, Pérez-López R, Pennos C, Martí X (2017) A
  contactless positioning system for monitoring discontinuities in three dimensions with geological and
  geotechnical applications. Review of Scientific Instruments 88:074501. https://doi.org/10.1063/1.4993925
- Klimeš J, Hartvich F, Tábořík P, Blahůt J, Briestenský M, Stemberk J, Emmer A, Vargas R, Balek J (2017) Studies on selected landslides and their societal impacts: activity report of the Prague World Centre of Excellence, Czech Republic. Landslides 14(4):1547-1553. https://doi.org/10.1007/s10346-017-0837-4
- Balek J, Blahůt J (2017) A critical evaluation of the use of an inexpensive camera mounted on a recreational unmanned aerial vehicle as a tool for landslide research. Landslides 14:1217-1224 https://doi.org/10.1007/s10346-016-0782-7
- Stemberk J, Hartvich F, Blahůt J, Rybář J, Krejčí O (2017) Tectonic strain changes affecting the development of deep seated gravitational slope deformations in the Bohemian Massif and Outer Western Carpathians. Geomorphology 289:3-17. https://doi.org/10.1016/j.geomorph.2016.07.004
- Blahůt J, Klimeš J, Balek J, Hájek P, Červená L, Lysák J (2017) Snow avalanche hazard of the Krkonoše National Park, Czech Republic. Journal of Maps 13(2):86-90. https://doi.org/10.1080/17445647.2016.1262794
- Klimeš J, Stemberk J, **Blahůt J**, Krejčí V, Krejčí O, Hartvich F, Kycl P (2017) Challenges for landslide hazard and risk management in 'low-risk' regions, Czech Republic—landslide occurrences and related costs (IPL project no. 197). Landslides 14:771-780. https://doi.org/10.1007/s10346-017-0798-7
- Hartvich F, **Blahůt J**, Stemberk J (2017) Rock avalanche and rock glacier: A compound landform study from Hornsund, Svalbard. Geomorphology 276(1):244-256. https://doi.org/10.1016/j.geomorph.2016.10.008
- Smolíková J, **Blahůt J**, Vilímek V (2016) Analysis of rainfall preceding debris flows on the Smědavská hora Mt., Jizerské hory Mts., Czech Republic. Landslides 13(4):683-696. https://doi.org/10.1007/s10346-015-0601-6
- Klimeš J, Yepes J, Becerril L, Kusák M, Galindo I, Blahůt J (2016) Development and recent activity of the San Andrés landslide on El Hierro, Canary Islands, Spain. Geomorphology 261:119-131. https://doi.org/10.1016/j.geomorph.2016.02.018
- Quan Luna B, **Blahůt J**, Camera C, van Westen C, Apuani T, Jetten V, Sterlacchini S (2014) Physically based dynamic run-out modelling for quantitative debris flow risk assessment: a case study in Tresenda, northern Italy. Environmental Earth Sciences 72(3):645-661. https://doi.org/10.1007/s12665-013-2986-7
- Blahůt J, Glade T, Sterlacchini S (2014) Debris flows risk analysis and direct loss estimation: the case study of Valtellina di Tirano, Italy. Journal of Mountain Science 11(2):288-307. https://doi.org/10.1007/s11629-013-2806-2
- Blahůt J, Klimeš J, Vařilová Z (2013) Quantitative rockfall hazard and risk analysis in selected municipalities of the České Švýcarsko national park, Northwestern Czechia. Geografie 118(3):205-220.
- Martí X, Rowberry MD, Blahůt J (2013) A MATLAB® code for counting the moiré fringe patterns recorded on the optical-mechanical crack gauge TM-71. Computers and Geosciences 52:164-167. https://doi.org/10.1016/j.cageo.2012.09.029
- Klimeš J, Blahůt J (2012) Landslide risk analysis and its application in regional planning: an example from the highlands of the Outer Western Carpathians, Czech Republic. Natural Hazards 64(2):1779-1803. https://doi.org/10.1007/s11069-012-0339-6
- Klimeš J, Rowberry M, Blahůt J, Briestenský M, Hartvich F, Košťák B, Rybář J, Stemberk J, Štěpančíková P (2012)
   The monitoring of slow-moving landslides and assessment of stabilisation measures using an optical–mechanical crack gauge. Landslides 9(3):407-415. https://doi.org/10.1007/s10346-011-0306-4
- **Blahût J**, Poretti I, Sterlacchini S, De Amicis M (2012) Database of Geo-hydrological Disasters for Civil Protection Purposes. Natural Hazards 60(3):1065-1083. https://doi.org/10.1007/s11069-011-9893-6
- Quan Luna B, Blahůt J, van Westen CJ, Sterlacchini S, van Asch TWJ, Akbas SO (2011) The application of numerical debris flow modelling for the generation of physical vulnerability curves. Natural Hazards and Earth System Sciences 11(7):2047-2060. https://doi.org/10.5194/nhess-11-2047-2011
- **Blahůt J**, Klimeš J (2011) Contribution to Czech terminology in landslide risk studies. Geografie 116(1):79-90. [in Czech]

- Sterlacchini S, Ballabio C, Blahůt J, Masetti M, Sorichetta A (2011) Spatial agreement of predicted patterns in landslide susceptibility maps. Geomorphology 125(1):51-61. ů https://doi.org/10.1016/j.geomorph.2010.09.004
- **Blahut J**, Horton P, Sterlacchini S, Jaboyedoff M (2010) Debris flow hazard modelling on medium scale: Valtellina di Tirano, Italy. Natural Hazards and Earth System Sciences, 10(11): 2379-2390. https://doi.org/10.5194/nhess-10-2379-2010
- **Blahut J**, van Westen CJ, Sterlacchini S (2010) Analysis of landslide inventories for accurate prediction of debrisflow source areas. Geomorphology 119(1-2):36-51. https://doi.org/10.1016/j.geomorph.2010.02.017

### **Applied results and analyses**

- Rowberry MD, Blahût J, Hartvich F, Stemberk J, Fučík Z, Briestenský M, Martí Rovirosa X, Garcés Cadenas FJ
  (2018) Device for the automatic monitoring of mutual displacements and rotation of bodies. Utility design n.
  31362 registered by the Industrial Property Office of the Czech Republic.
- Blahůt J (2017 ongoing) Membership of an expert at the Geotechnical Monitoring Council (RAMO) of the D 8 motorway construction, 0805 Lovosice Řehlovice. Customer: ŘSD ČR.
- Klimeš J, Blahůt J, Balek J, Kusák M, Krejčí O, Aue M, Baldík V, Dostalík M, Gilíková H, Havlín A, Krejčí V, Kycl P, Malík J, Nečas J, Novotný J, Novotný R (2017) Analysis of the planned sections of the construction of highways and first class roads and their potential threat by slope deformations. Customer: ŘSD ČR, 207 p.
- Novotný J, Kycl P, Král J, Rozsypal A, Stemberk J, Blahůt J, Klimeš J, Tábořík P, Mašín D, Boháč J, Hartvich F,
  Jelének J (2017) Methodical Instruction of the Ministry of Transport of the Czech Republic for the preparation,
  implementation and monitoring of linear transport constructions in relation to the risk of slope deformations,
  including the handling of extraordinary events. Customer: Ministry of Transport of the Czech Republic. 88 p.
- **Blahůt J**, Hartvich F, Stemberk J, Bareš Z (2017) Expert assessment of the realization of a variant solution for the construction of "D1 motorway Hubová-Ivachnová". Customer: NDS a.s., 25 p.
- Stemberk J, Mašín D, Balek J, **Blahůt J**, Hartvich F, Chaloupka D, Kadlečík P, Kalinová R, Kusák M, Rott J, Rybář J, Špaček P, Tábořík P (2016) Analysis of causes of landslide on the D8 motorway at Dobkovičky in the sense of Government Resolution No. 640 from 14 August 2013. Customer: Ministry of Transport of the Czech Republic, 289 pages + 7 annexes

#### **Solicited speaches**

- Blahůt J (2020) Principles of monitoring, landslide monitoring. Invited lecture within 145.222: Rivers and Slopes course at Massey University, Palmerston North, Manawatu, New Zealand, 18th March 2020.
- Blahut J (2020) Long-runout landslides: Debris avalanches from ocean volcanoes, El Hierro case study. Invited lecture within 145.327: Catchment Dynamics course at Massey University, Palmerston North, Manawatu, New Zealand, 16th March 2020.
- Blahut J (2020) Debris flow processes and hazards. Invited lecture within 145.303 Field Work: Alpine Physical Geography course at Massey University, Aoraki Mount Cook, New Zealand, 10th January 2020.
- Blahut J (2019) Slope movements in the Arctic revealed by multidisciplinary research: examples from Hornsund, Svalbard. SPARC (Students in Polar and Alpine Research Conference), 4th 6th April 2019, Brno, Czechia.
- Blahut J (2017) Slope deformations in the Czech Republic: their types, origin and spatial extension in relation to the possible threat to the health and property of the population. Conference of the Committee on Territorial Development, Public Administration and the Environment of the Senate of the Parliament of the Czech Republic on the topic: "Disasters Underestimated Dangerous?". Prague, Czech Republic, 21 November 2017. [in Czech]
- Blahůt J (2017) Analysis of the causes of landslide from June 2013 on the D8 highway near Dobkovičky. State of geomorphological research in 2017, Czech Association of Geomorphologists 15th Annual Assembly. Pec pod Sněžkou, Czechia, 17th May 2017.
- Blahůt J (2017) Giant landslides on volcanic islands using example of El Hierro. Seminar of Applied Geology, Institute of Hydrogeology, Engineering Geology and Applied Geophysics. Faculty of Sciences, Charles University, Prague, Czechia, 20th March 2017. [in Czech]

- Blahůt J (2016) Modern methods in landslide research. Seminar: 90 years from landslide in Dneboh village.
   Mnichovo Hradiště, Czechia, 26th May 2016. [in Czech]
- Blahůt J (2016) Megalandslides on volcanic islands case study of El Hierro. Seminar of the Department of Physical Geography and Geoecology. Faculty of Sciences, Charles University, Prague, Czechia, 17th March 2016. [in Czech]
- Blahut J, Klimeš, J. (2015) Landslides in Czechia: Research tradition, complexities and perspectives. Workshop: Natural Hazards among us views of European leading scientists on environmental and societal changes, Prague, Czechia, 3rd December 2015.

#### **Tutored and co-tutored theses**

#### **Doctoral dissertations**

 Racek O (ongoing) Local conditions and characteristics of rock slopes and their influence on rock stability conditions and rock falls. Doctoral thesis, Charles University, Faculty of Science, Department of Physical Geography and Geoecology. Tutor Dr. Jan Blahůt, co-tutor Prof. Vít Vilímek.

#### **Master theses**

- Racek O (2018) Landslide susceptibility analysis of Czechia. Diploma thesis, Charles University, Faculty of Science, Department of Physical Geography and Geoecology, Prague, 153 pp. Tutor Dr. Jan Blahůt, co-tutor Dr. Filip Hartvich. [in Czech]
- Olejár F (2018) Stability of volcanic islands in relation to giant landslides on the example of El Hierro island, Canary Islands. Diploma thesis, Charles University, Faculty of Sciences, Institute of Hydrogeology, Engineering Geology and Applied Geophysics, Prague, 88 pp. Tutor Dr. Jan Blahůt, co-tutor Assoc. prof. David Mašín., Dr. Josef Rott. [in Slovak]
- Vorlíček P (2017) Slope movement analysis in the northwestern part of the Příhrazská plošina platform and evaluation of sandstone properties relative to the stability situation. Diploma thesis, Charles University, Faculty of Sciences, Institute of Hydrogeology, Engineering Geology and Applied Geophysics, Prague, 132 pp. Tutor Dr. Jan Blahůt, co-tutor Ing. Zdeněk Kudrna. [in Czech]
- Pantůčková K (2016) Analysis of slope deformation from the Mužský hill, Příhrazská plošina Plateau. Diploma thesis, Charles University, Faculty of Sciences, Institute of Hydrogeology, Engineering Geology and Applied Geophysics, Prague, 72 pp. Tutor Dr. Jan Blahůt, co-tutors Dr. Petr Tábořík, Ing. Zdeněk Kudrna. [in Czech]
- Sangalli L (2009) Predisposizione dei versanti ai movimenti di massa attraverso curve di tasso di predizione.
   Studio statistico dell'area di Tirano sud. Diploma thesis, University of Milano-Bicocca, Department of Environmental and Territorial Sciences, Milano, 140 pp. Tutor Prof. Andrea Fabbri, co-tutors Ilaria Poretti, Dr. Simone Sterlacchini, Jan Blahůt.
- Mauriello M (2009) Previsione di pericolo di frana nell'area di Tirano nord: incertezza di valori di favorabilità.
   Diploma thesis, University of Milano-Bicocca, Department of Environmental and Territorial Sciences, Milano, 146 pp. Tutor Prof. Andrea Fabbri, co-tutors llaria Poretti, Dr. Simone Sterlacchini, Jan Blahůt.

#### **Bachelor theses**

- Racek J (2020) Use of rock mass classifications for rock fall susceptibility analysis in the conditions of the Bohemian Massif. Bachelor thesis, Faculty of Sciences, Institute of Hydrogeology, Engineering Geology and Applied Geophysics, Prague, 59 pp. Tutor Dr. Jan Blahůt, co-tutor Dr. Josef Rott. [in Czech]
- Kalina J (2018) Giant landslides on volcanic islands on the example of the Hawaii archipelago. Bachelor thesis, Charles University, Faculty of Sciences, Institute of Hydrogeology, Engineering Geology and Applied Geophysics, Prague, 57 pp. Tutor Dr. Jan Blahůt, co-tutor Assoc. prof. David Mašín. [in Czech]
- Racek O (2015) Snow avalanche modelling. Bachelor thesis, Charles University, Faculty of Science, Department
  of Physical Geography and Geoecology, Prague, 81 pp. Tutor Dr. Jan Blahut, co-tutor Dr. Michal Jeníček [in
  Czech]
- Mischiosa M (2010) SIT e modeli probabilistici per l'identificazione dei siti di nidificazione di merops apiaster. Bachelor thesis, University of Milano, 83 pp. Tutor Dr. Simone Sterlacchini, co-tutor Dr. Jan Blahůt.