Pedro Henrique Muniz Lima, BSc, MSc

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Education

2015 – · · · · **PhD candidate, Natural Sciences, Geography - University of Vienna**
Department of Geography and Regional Research, Geomorphological Systems and Risk Research Group (ENGAGE).
Thesis title: *"Landslide susceptibility mapping at varied scales. Methodological designs adaptations to cope with common input data related challenges".*
Advisor: Univ.-Prof. Dipl.-Geogr. Dr. Thomas Glade

2013 – 2015 **MSc, Geography - Federal University of Rio de Janeiro, UFRJ, Brazil**
Department of Geography, Institute of Geosciences.
Thesis title: *"The Drainage Efficiency Index (DEI) as a subsidy for a spatial analysis of areas susceptible to mass-movements occurrence".* (Title translated from Portuguese)
Advisor: Univ.-Prof. Dr. Manoel do Couto Fernandes and Univ.-Prof. Dr. Ana Luiza Coelho Netto

2007 – 2012 **BSc, Biology, with a minor in environmental Sciences - Fluminense Federal University, UFF, Brazil**
Monography title: *"Extreme rainfall events and sediment production in two different forested catchments in the Tijuca Massif - RJ: influences of recovering landslide, roads and trails on rates of sediment yield and transport".* (Title translated from Portuguese)
Advisor: Univ.-Prof. Dr. Ana Luiza Coelho Netto

Relevant work experience

2021 – · · · · **Researcher** in MoNEW and NoeMOTION Research projects. ENGAGE
Project leader: Univ.-Prof. Dipl.-Geogr. Dr. Thomas Glade

2019 – 2021 **Data Scientist** at Ubiq.ai ubiq.ai/

2019 – 2019 **Visiting researcher,** EURAC, Inst. for Earth Observation. eurac.edu/

2015 – 2019 **External PhD** at the ENGAGE working group.
Scholarship holder from the *Conselho Nacional de Desenvolvimento Científico e Tecnológico*, CNPq, Brazil.

2013 – 2013 **Environmental Analyst** at *Terra Nova Escritório de Projetos Sociais e Ambientais.*

2012 – 2012 **Project employee; GIS especialist** at *"Atualização do Mapeamento Geológico-Geotécnico e Avaliação dos Elementos de Estabilização das Encostas da CNAAA, Angra Dos Reis".*
(GCS.A/CT 4500142806 e PEC 14 329)

2011 – 2012 **Project employee; GIS especialist** at *"Mapeamento de Riscos Frente aos Deslizamentos de Encostas no Município de Angra dos Reis, RJ."* *(Contract COPPETEC 030/2010)*

Skills

Languages
Portuguese - Mother language.
English - Fluent in spoken and written.
German - Good comprehension skills, while lower communication ability.

Skills (continued)

Computer skills — -R; -Python; -SQL; -Git; LaTeX; Microsoft Office; E-Learning; -GIS (ArcGIS, ArcPRO, QGIS, *r.avaflow*); numerical modeling …

Teaching contributions

2019 & 2022 — University of Vienna: Basics in Earth Surface Dynamics and Management (290023 VU)

2020 — University of Vienna: Current research spectrum in geomorphology

University of Vienna: Scientific Progress in Geomorphology (290212 VU)

2019 — University of Vienna: Modelling in Physical Geography (290131 UE)

2014 — Federal University of Rio de Janeiro: Hidrologia aplicada (*Applied hydrology*) (IGG-603)

Research Publications

Journal Articles

1. **Lima**, **P.**, Steger, S., Mergili, M. & Glade, T. Conventional statistical based landslide susceptibility models may only tell us half of the story: potential underestimation of landslide impact areas depending on the modelling design. *Geomorphology* ***(submitted manuscript)*** (2022).
2. **Lima**, **P.**, Steger, S., Murillo-García, F. & Glade, T. Literature review and bibliometric analysis on data-driven assessment of landslide susceptibility. *Journal of Mountain Sciences.* **19,** 1670–1698. ISSN: 1612-5118 (2022).
3. **Lima**, **P.**, Steger, S. & Glade, T. Counteracting flawed landslide data in statistically based landslide susceptibility modelling for very large areas: a national-scale assessment for Austria. *Landslides.* ISSN: 1612-5118. (2021) (2021).
4. Lin, Q., **Lima**, **P.**, Steger, S., Glade, T., Jiang, T., Zhang, J., Liu, T. & Wang, Y. National-scale data-driven rainfall induced landslide susceptibility mapping for China by accounting for incomplete landslide data. *Geoscience Frontiers* **12,** 101248. ISSN: 1674-9871 (2021).
5. Fernandes, M. C., Oliveira, L. F. B., Colares, I. V. V., Araújo, R. S. & **Lima**, **P.** Comportamento de análises em superfície planimétrica e modelada frente a representações cartográficas e índices geomorfológicos - bacia do Rio Cuiabá - Petrópolis (RJ). *Revista Brasileira de Geomorfologia* **18** (out. 2017).

Conference Proceedings, including oral, or poster presentations

1. **Lima**, **P.**, Steger, S. & Glade, T. *Comparison of non-landslide sampling strategies to counteract inventory-based biases within national-scale statistical landslide susceptibility models* in. **Vol. 19 (EGU2017-13523)** (2017b). https://meetingorganizer.copernicus.org/EGU2017/EGU2017-13523.pdf.
2. **Lima**, **P.**, Steger, S., Glade, T. & Mergili, M. *Combining landslide susceptibility with potential runout: an integrative approach combining data-driven methods* in. **S06. Geomorphological hazards and risks** (University of Athens, Greece, 2019b). http://www.geomorph.org/wp-content/uploads/2020/01/RCG2019_Abstract-book_20200108.pdf.
3. Arango Carmona, M. I., **Lima**, **P.**, Mergili, M. & Glade, T. *Mobility and hazard analysis of selected landslides in Lower Austria* in. **Vol. 22 (EGU22-8646)** (2022). https://doi.org/10.5194/egusphere-egu22-8646.

4. Jiménez Donato, Y. A., **Lima**, **P.**, Arango Carmona, M. I. & Glade, T. *Risk assessment of earth mass movements in Lower Austria. Case study: NoeMOTION Project* in. **ICG2022-616** (University of Coimbra, Portugal, 2022). https://doi.org/10.5194/icg2022-616.

5. **Lima**, **P.**, Steger, S., Petschko, H., Goetz, J., Schweigl, J., Bertagnoli, M. & Glade, T. *Exploiting newly available landslide data to verify existing landslide susceptibility maps a decade after their implementation* in. **Vol. 22 (EGU22-7351)** (2022). https://meetingorganizer.copernicus.org/EGU22/EGU22-7351.html.

6. **Lima**, **P.**, Steger, S., Petschko, H., Goetz, J., Schweigl, J., Bertagnoli, M. & Glade, T. *How well do landslide susceptibility maps hold up over time? Reviewing the accuracy of maps implemented for spatial planning in Lower Austria* in. **ICG2022-154** (University of Coimbra, Portugal, 2022). https://doi.org/10.5194/icg2022-154.

7. **Lima**, **P.**, Steger, S., Glade, T. & Mergili, M. *Enhancing the completeness of statistical landslide susceptibility modeling by integration of release and propagation zones* in. **Vol. 20 (2020-8630)** (2020). https://meetingorganizer.copernicus.org/EGU2020/EGU2020-8630.pdf.

8. **Lima**, **P.**, Steger, S. & Glade, T. *Evaluation of statistical and machine learning based landslide susceptibility models for very large areas – coping with error prone input data* in. **Vol. 21 (EGU2019-11314)** (2019). https://meetingorganizer.copernicus.org/EGU2019/EGU2019-11314.pdf.

9. **Lima**, **P.**, Steger, S. & Glade, T. *Landslide susceptibility mapping at national scale for Austria. Scientific challenges within applicable solutions* in (2018).

10. **Lima**, **P.**, Steger, S. & Glade, T. *Modelling strategies to cope with limitations of statistical landslide susceptibility models applied for large areas. A national scale study for the Austrian territory* in. **Vol. 20 (EGU2018-9067)** (2018). https://meetingorganizer.copernicus.org/EGU2018/EGU2018-9067.pdf.

11. Coelho Netto, A. L., Facadio, A. C., Silva, R. & **Lima**, **P.** *Bioclimatic changes and landslide recurrence in the mountainous region of Rio de Janeiro: are we ready to face the next landslide disaster?* in. **Vol. 19 (EGU2017-17718)** (2017). https://meetingorganizer.copernicus.org/EGU2017/EGU2017-17718.pdf.

12. **Lima**, **P.**, Coelho Netto, A. L. & Fernandes, M. C. *The drainage efficiency index (DEI) as a morphological indicator of landslide spatial occurrence in mountainous catchments. A case of study applied in the mountainous region of Brazilian Southeastern* in. **Vol. 18, EGU2016-7750** (2016). https://meetingorganizer.copernicus.org/EGU2016/EGU2016-7750.pdf.

13. **Lima**, **P.**, Coutinho, B. H., Gomes, G. B. & Coelho Netto, A. L. *Topographic Parameters related to translational landslide occurrence and susceptibility mapping at Córrego Dantas, Nova Friburgo, RJ.* in (2015).

14. Borges, G. F., **Lima**, **P.** & Avelar, A. S. *Geomorfologia, solos e movimentos de massa ocorridos em janeiro de 2011 na bacia do Córrego Dantas, Nova Friburgo (RJ)* in. **5** (Universidade Federal do Amazonas, out. 2014), 141–144. https://www.periodicos.ufam.edu.br/index.php/revista-geonorte/article/view/1291.

15. Borges, G. F., **Lima**, **P.** & Avelar, A. S. *Geomorfologia, solos e movimentos de massa ocorridos em janeiro de 2011 na bacia do Córrego Dantas, Nova Friburgo (RJ)* in (out. 2014).

16. **Lima**, **P.**, Coutinho, B. H., Gomes, G. B., Fernandes, M. C. & Coelho Netto, A. L. *Parâmetros morfométricos relacionados às bacias de 1º ordem e a ocorrência de deslizamentos rasos na bacia do Córrego Dantas: Nova Friburgo - RJ* in. **5** (Universidade Federal do Amazonas, out. 2014), 218–223. https://www.periodicos.ufam.edu.br/index.php/revista-geonorte/article/view/1305.

17. Araujo, I. S., Barbosa, L. S., **Lima**, **P.**, Avelar, A. S. & Rotunno Filho, O. C. *Modelagem Hidrológica das interações de uso urbano e cobertura vegetal na bacia do Rio Cachoeira, Maciço da Tijuca - RJ.* in. **Anais do 9 Sinageo: Geomorfologia de encostas** (2012). http://www.sinageo.org.br/2012/trabalhos/2/2-506-633.html.

18. Barbosa, L. S., **Lima**, **P.**, Araújo, I. S., Sato, A. M. & Avelar, A. S. *Carta geomorfológica em base funcional como subsidio a carta de suscetibilidade aos movimentos de massa: estudo de caso no município de Angra dos Reis, RJ.* in (2012).

19. Barbosa, L. S., **Lima**, **P.**, Negreiros, A. B. & Coelho Netto, A. L. *Respostas hidrológicas e produção de sedimentos em uma clareira de deslizamento em ambiente montanhoso florestal, Maciço da Tijuca, Rio de Janeiro, Brasil* in (2012).

20. **Lima**, **P.**, Barbosa, L. S., Negreiros, A. B. & Coelho Netto, A. L. *Impulsos Variáveis de Chuvas e Descarga de Sedimentos em duas Diferentes Bacias no Maciço da Tijuca (Rio de Janeiro, Brasil): influências de clareiras de deslizamentos, estradas pavimentadas e trilhas.* in (2012).

21. Negreiros, A. B., **Lima**, **P.**, Barbosa, L. S. & Coelho Netto, A. L. *Avaliação da Recuperação vegetal e respostas hidro-erosivas em cicatrizes de deslizamentos em área montanhosa de floresta Atlântica, Maciço da Tijuca, RJ.* in. **Anais do 9 Sinageo: Geomorfologia de encostas** (2012). http://www.sinageo.org.br/2012/trabalhos/1/1-678-670.html.

22. Negreiros, A. B., **Lima**, **P.**, Barbosa, L. S. & Coelho Netto, A. L. *Recuperation of Atlantic Forest and Hydro-Erosive Responses in Landslides Scars on Steep Slopes, Rio de Janeiro, Brasil* in (2012).

23. Barbosa, L. S., Silva, R. P., **Lima**, **P.** & Coelho Netto, A. C. *Respostas hidrológicas e produção de sedimentos numa clareira de deslizamento em ambiente montanhoso.* in (2011).

24. **Lima**, **P.**, Silva, R. P., Barbosa, L. S. & Coelho Netto, A. C. *Impulsos variáveis de chuvas e descarga de sedimentos em pequenas bacias florestadas no Maciço da Tijuca: influências de clareiras de deslizamentos, estradas pavimentadas e trilhas.* in (2011).

25. Silva, R. P., Barbosa, L. S., **Lima**, **P.** & Coelho Netto, A. C. *Mapeamento de fontes de produção de sedimentos em encostas montanhosas sob Floresta Atlântica: Parque Nacional da Tijuca (PNT), Maciço da Tijuca, Rio de Janeiro* in (2011).

26. **Lima**, **P.**, Faria, F. H. C. & Coelho Netto, A. C. *Reabilitação funcional em clareiras de deslizamentos na floresta atlântica e efeitos na produção de sedimentos em períodos chuvosos.* in (2010).

Books and Chapters

1. **Lima**, **P.**, Steger, S., Glade, T., Tilch, N., Schwarz, L. & Kociu, A. en. in *Advancing Culture of Living with Landslides. WLF 2017* (eds Mikos, M., Tiwari, B., Yin, Y. & Sassa, K.) 943–951 (Springer International Publishing, Cham, 2017). ISBN: 978-3-319-53498-5.

2. Coelho Netto, A. L., Silva, R., Facadio, A. C. & **Lima**, **P.** in *Willy Lacerda: doutor no saber e na arte de viver.* (eds Silva Nunes, A. L. L., Mahler, C. F., Danziger, F. A. B., de Oliveira e Castro, F. J. C., Lopes, F. R., Aragão, F. T. S., Martins, I. S. M. & Goretti da Motta, L. M.) 235–241 (Outras Letras, 2016).

3. Coelho Netto, A. L., Avelar, A. D. S., Sato, A. M., Fernandes, M. D. C., Oliveira, R. R., Costa, R. V., Barbosa, L. S., **Lima**, **P.** & Lacerda, W. A. in *Extreme Rainfall Induced Landslides an International Perspective* (eds Lacerda, W. A., Palmeira, E. M., Coelho Netto, A. L. & Ehrlich, M.) 263–296 (Oficina de Textos, São Paulo, SP. Brazil, 2014). ISBN: 978-85-7975-150-9. https://s3-sa-east-1.amazonaws.com/ofitexto.arquivos/sumarios/Extreme-rainfall-induced-landslides_sum.pdf.

4. Coelho Netto, A. L., Sato, A. M., de Souza Avelar, A., Vianna, L. G. G., Araújo, I. S., Ferreira, D. L. C., **Lima**, **P.**, Silva, A. P. A. & Silva, R. P. in *Landslide Science and Practice: Volume 6: Risk Assessment, Management and Mitigation* (eds Margottini, C., Canuti, P. & Sassa, K.) 377–384 (Springer Berlin Heidelberg, Berlin, Heidelberg, 2013). ISBN: 978-3-642-31319-6.

Thesis and monographs

1. **Lima**, **P.** *O índice de eficiência de drenagem como subsídio á análise espacial de áreas suscetíveis a ocorrência de movimentos de massa.* Master Thesis. 2015. http://objdig.ufrj.br/16/teses/831103.pdf.

2. **Lima**, **P.** *Eventos extremos de chuva e produção de sedimentos em duas diferentes bacias florestadas no Maciço da Tijuca - RJ: influências de clareiras de deslizamentos, estradas pavimentadas e trilhas na taxa de produção e transporte de sedimentos.* Monography; Bachelor. 2012.

Further relevant education

- 2019 Introduction to Working on the VSC-3 Cluster. (Workload: 8h). Vienna Scientific Cluster Research Center, VSC, Austria.
- Linux and First Steps on the VSC-3 Cluster. (Workload: 8h). Vienna Scientific Cluster Research Center, VSC, Austria.
- Professional Presentation of Research Results (Winterterm 2018). (Workload: 20h). Universität Wien, UNIVIE, Austria.
- International Summer School on Geospatial Data Science Using R. (Workload: 38h). Friedrich-Schiller-Universität Jena, UNI/Jena, Germany.
- 2018 How to Approach Proposal Writing for Postdoc Funding Applications. (Workload: 20h). Universität Wien, UNIVIE, Austria.
- 2016 R - Advanced. (Workload: 20h). Universität Wien, UNIVIE, Austria.
- Introduction to R. (Workload: 20h). Universität Wien, UNIVIE, Austria.
- Laram School - International school on landslide risk assessment and mitiga. (Workload: 80h). Università degli Studi di Salerno, UniSa, Italy.

Services to the discipline - Reviewer of scientific publications

- 2016 4th World Landslide Forum
- 2018-2019 Environmental Modeling & Assessment
- 2019 5th World Landslide Forum
- 2021 Scientific Reports. Nature
- 2018-2022 Natural Hazards (NHAZ)
- 2022 Geoenvironmental Disasters

Grants & awards

- 2015 - 2019 Grants: *Conselho Nacional de Desenvolvimento Científico e Tecnológico*, CNPq, Brazil.
- 2013 - 2015 Grants: *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ*, FAPERJ, Brazil.
- 2010-2011 Grants: *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ*, FAPERJ, Brazil.
- 2014 Award: BOLSA NOTA 10, *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ*, FAPERJ, Brazil.
- 2013 Award: COBRAE 2013. Best contributions of COBRAE 2013 - Parallel Session (Field Investigations), Brazilian Association of Soil Mechanics.