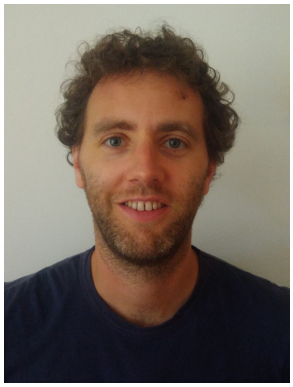
Luca Peruzzo Curriculum Vitae and Publications



Personal Information

Name	Luca
Surname	Peruzzo
Year of Birth	1989
Nationality	Italian

Work Experience

Mar 2023 - Today
Researcher at University of Padova
dept. Geosciences
Padova - Italy

May 2022 - Mar 2023
Geophysicist and Sales Manager
at MoHo - Science and Technology
Venice - Italy

Oct 2019 - May 2022
Postdoc at Berkeley National Laboratory
dept. of Earth and Environmental Sciences
Berkeley - California - USA

May 2017 - Oct 2019
Grad Student Assistant and Affiliate
at Lawrence Berkeley National Laboratory
dept. Earth and Environmental Sciences
Berkeley - California - USA

May - Sep 2015
Geophysicist at Studiosisma
Vicenza, Italy

Education and Accreditations

2025
National Scientific Qualification for Associate Professorship
04/A4, Geophysics - 2023-25 Commitee, 5th Examination Session
Italian Ministry of Education, University and Research

2019	**Co-Tutelage PhD in Environmental Geophysics**
Oct 2015 - May 2017	University Bordeaux Montaigne *dept. Environnement, Géoressources et Ingénierie du Développement durable*
May 2017 - Oct 2018	Berkeley National Laboratory *dept. Earth and Environmental Sciences*
Scholarship	IDEX - Initiative D'EXecellence University of Bordeaux
Thesis	Geoelectrical approaches for characterizing soil geochemical processes and soil-root interactions
Supervisors	Profs. Susan Hubbard and Myriam Schmutz
Committee	Profs. Andrew Binley, Andreas Kemna, Muriel Llubes and Yuxin Wu
Invited Guests	Profs. Michel Franceschi and Giorgio Cassiani
2015	**M.S. Geology and Technical Geology** University of Padua, 110/110 cum Laude
Thesis	Combined geophysical surveys for the characterization of a reconstructed river embankment
Supervisor	Prof. Giorgio Cassiani
2012	**B.S. Earth Sciences** University of Padua, 100/110
Thesis	Minero-petrographic characterization of sulfide mineralizations in the Boccassuolo ophiolite (Northern Apennines, Italy)
Supervisor	Prof. Paolo Nimis

Teaching

2023/24 - Today	**Petrophysics** - Convenor Master in Geophysics for Natural Risks and Resources dept. of Geosciences University of Padova
2024/25 - Today	**Environmental Geophysics** - Lecturer Master in Environmental Engineering dept. of Civil, Environmental and Architectural Engineering University of Padova
2024/25	**Applied Geophysics** - Lecturer Master in Land And Environment Science And Technology dept. of Agricultural Sciences and Veterinary Medicine University of Padova

PhD Student Supervision

2024 - Today	Matteo Censini - University of Padova
2024 - Today	Alberto Cogliati - University of Padova
2025 - Today	Viola Cioffi - University of Padova

Publications in International Refereed Journals

1. Nesterova O., Barone I., Cassiani G., Brovelli A., Rodríguez Tribaldos V., Galtarossa A., Palmieri L., Schenato L., **Peruzzo L.**, Boaga J., Pavoni M., Chalari A., and Deiana R. Fully integrated optical Distributed Acoustic Sensing and seismic nodes acquisition for near-surface wave characterization in a complex urban archaeological site. *Geophysics*. 10.1190/GEO-2025-0406

2. Carrera A., Pavoni M., Ruiz-Pereira S., Boaga J., **Peruzzo L.**, Cioffi V., Slupski P.M., Marquardt C., Ivan L., Boros G., Szalai Z., and Nagy B. 2026. First subsurface characterization of periglacial areas in the Yendegaia National Park, Southern Tierra del Fuego Island, Chile. *Cold Regions Science and Technology*. https://doi.org/10.1016/j.coldregions.2026.104919.

3. Barone I., Bast A., Pavoni M., Gaona Torres S.J., **Peruzzo L.**, and Boaga J. 2026. Multichannel Analysis of Surface Waves (MASW) for the internal characterisation of the Flüela rock glacier: overcoming the limitations of seismic refraction tomography. *The Cryosphere*. https://doi.org/10.5194/tc-20-1163-2026.

4. Iván V., Mary B., Schwartz N., **Peruzzo L.**, Ghinassi M., and Cassiani G. 2026. Distinguishing water salinity, water saturation and clay content using spectral induced polarization: a strategy for monitoring arid soil conditions. *Near Surface Geophysics*. https://doi.org/10.1093/gji/ggag038.

5. Di Prima S., Fernandes G., Burguet M., Paz Salazar M., Marras E., Murgia I., Kaffas K., **Peruzzo L.**, Stewart R.D., Abou Najm M.R., Comegna A., Lassabatere L., Cassiani G., Penna D., Massari C., and Giadrossich F. 2026. Trees control hillslope subsurface flow: Insights from stemflow and throughfall experiments, geophysical surveys, and numerical modeling. *Journal of Hydrology* https://doi.org/10.1016/j.jhydrol.2025.134723.

6. Pini S., Cassiani G., **Peruzzo L.**, Piemontese L., Dani A., Giambastiani Y., and Preti F. 2026. Sediment water storage investigation of check dams using Electrical Resistivity Tomography. *Journal of Hydrology* https://doi.org/10.1016/j.jhydrol.2025.134647.

7. **Peruzzo L.**, Werban U., Pohle M., Pavoni M., Mary B., Cassiani G., Consoli S., and Vanella D. 2025. High-resolution near-surface electromagnetic mapping for the hydrological modeling of an orange orchard. *SOIL*. https://doi.org/10.5194/soil-11-811-2025.

8. Pavoni M., **Peruzzo L.**, Boaga J., Carrera A., Barone I., and Bast A. 2025. Brief communication: Use of lightweight and low-cost steel net electrodes for electrical resistivity tomography (ERT) surveys performed on coarse-blocky surface environments. *The Cryosphere*. https://doi.org/10.5194/tc-19-4141-2025.

9. Chen H., Chou C., **Peruzzo L.**, Borglin S., Chang C., Bandai T., Kneafsey T., Nakagawa S., Birkholzer J., Zheng L, and Wu Y. 2025. Development of an ERT-Based Framework for Bentonite Buffers Monitoring From Laboratory Tests: 1. Characterizing Thermal–Hydrological–Mechanical Processes. *Journal of Geophysical Research: Solid Earth*. https://doi.org/10.1029/2024JB030798.

10. Chen H., Chou C., **Peruzzo L.**, Borglin S., Chang C., Bandai T., Kneafsey T., Nakagawa S., Birkholzer J., Zheng L, and Wu Y. 2025. Development of an ERT-Based Framework for Bentonite Buffers Monitoring From Laboratory Tests: 2. Quantitative Moisture Dynamics

Estimation Model. *Journal of Geophysical Research: Solid Earth*. https://doi.org/10.1029/2024JB030799.

11. Rossi C., Deiana R., Garosi G.A., De Leo A., Di Stefano S., Primon S., **Peruzzo L.**, Barone I., Rampin S., Maniero P., and Mozzi P. 2025. Bronze Age productive sites on the margin of the Venice Lagoon: new evidence and context. *LAND*. https://doi.org/10.3390/land14071452.

12. Gu H., Wang Y., **Peruzzo L.**, Li B., Lu Y., and Liu X. 2025. Linking winter wheat (Triticum aestivum L) root traits and root water uptake with electrical resistivity tomography. *Agricultural Water Management*. https://doi.org/10.1016/j.agwat.2024.109247.

13. Aulenta F., Tucci M., Cruz Viggi C., Milia S., Hosseini S., Farru G., Sethi R., Bianco C., Tosco T., Ioannidis M., Zanaroli G., Ruffo R., Santoro C., Marzocchi U., Cassiani G., and **Peruzzo L.** 2025. Groundwater Electro-Bioremediation via Diffuse Electro-Conductive Zones: A Critical Review. *Environmental Science and Ecotechnology*. https://doi.org/10.1016/j.ese.2024.100516.

14. Carrera A., Morari F., **Peruzzo L.**, Barone I., Pavoni M., Boaga J., Longo M., Dal Ferro N., and Cassiani, G. 2024. Advances in Soil Compaction Characterization Through Applied Geophysics. 2024 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), IEEE, Padua, Italy, pp. 41–46. https://doi.org/10.1109/MetroAgriFor63043.2024.10948770.

15. **Peruzzo L.**, Carrera A., Mary B., Cassiani G., and Morari F. 2024. ERT and EMI Characterization of the Spatiotemporal Variability of Agricultural and Forest Soils: Some Common Methodological Issues. 2024 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), IEEE, Padua, Italy, pp. 259–264. https://doi.org/10.1109/MetroAgriFor63043.2024.10948814.

16. **Peruzzo L.**, Chou C., Hubbard S.S., Brodie E., Uhlemann S., Dafflon B., Wielandt S., Mary M., Cassiani G., Morales A., and Wu Y. 2024. Outdoor Mesoscale Fabricated Ecosystems: Rationale, Design, and Application to Evapotranspiration. *Science of the Total Environment*. https://doi.org/10.1016/j.scitotenv.2024.177565.

17. Carrera A., **Peruzzo L.**, Longo M., Cassiani G., and Morari F. 2024. Uncovering soil compaction: performance of electrical and electromagnetic geophysical methods. *SOIL*. https://doi.org/10.5194/soil-10-843-2024.

18. Pavoni M., Boaga J., **Peruzzo L.**, Barone I., Mary B., and Cassiani G. 2024. Characterization of a Contaminated Site Using Hydro-Geophysical Methods: From Large-Scale ERT Surface Investigations to Detailed ERT and GPR Cross-Hole Monitoring. *Water*. https://doi.org/10.3390/w16091280.

19. Uhlemann S., **Peruzzo L.**, Chou C., Williams H. K., Wielandt S., Falco N., Wu Y., Carr B., Meldrum P., Chambers J., and Dafflon B. 2024. Bedrock and vegetation gradients modulate subsurface water flow dynamics of a mountainous hillslope. *Water Resources Research*. https://doi.org/10.1029/2023WR036137.

20. Mary B., Ivàn V., Meggio F., **Peruzzo L.**, Blanchy G., Chou C., Ruperti B., Wu Y., and Cassiani G. 2023. Imaging of the active root current pathway under partial root-zone drying stress: A laboratory study for Vitis vinifera. *Biogeosciences*. https://doi.org/10.5194/bg-20-4625-2023.

21. Chou C., **Peruzzo L.**, Falco N., Hao, Z., Mary B., Wang J., and Wu Y. 2023. Improving Evapotranspiration Computation with Electrical Resistivity Tomography in a Maize Field. *Vadose Zone Journal*. https://doi.org/10.1002/vzj2.20290.

22. Mary B., **Peruzzo L.**, Wu Y., and Cassiani G. 2022. Advanced Potential Field Analysis Applied to Mise-à-la-Masse Surveys for Leakage Detection. *Journal of Geophysical Research: Solid Earth*. https://doi.org/10.1029/2022JB024747.

23. Chang C., Borglin S., Chou C., Kneafsey T., Wu Y., Zheng L., Nakagawa S., Xu H., **Peruzzo L.**, and Jens B. 2021. Experimental Study of Coupled THMC Processes in Bentonite Buffer for Geologic Disposal of Radioactive Waste. 55th U.S. Rock Mechanics/Geomechanics Symposium. *American Rock Mechanics Association* https://onepetro.org/ARMAUSRMS/proceedings-abstract/ARMA21/All-ARMA21/ARMA-2021-1772/468142.

24. Mary B., **Peruzzo L.**, Ivàn V., Facca E., Manoli G., Putti M., Camporese M., Wu Y., and Cassiani G. 2021. Combining Models of Root-Zone Hydrology and Geoelectrical Measurements: Recent Advances and Future Prospects. *Frontiers in Water*. https://doi.org/10.3389/frwa.2021.767910.

25. **Peruzzo L.**, Liu X., Chou C., Blancaflor B.E., Zhao H., Ma X., Mary B., Iván V., Weigand M., and Wu Y. 2021. Three-Channel Bioimpedance Spectroscopy for Field-Scale Root Phenotyping. *The Plant Phenome Journal*. https://doi.org/10.1002/ppj2.20021.

26. Hubbard S.S., Schmutz M., Balde A., Falco N., **Peruzzo L.**, Dafflon B., Léger E, Wu Y. 2021. Estimation of soil classes and their relationship to grapevine vigor in a Bordeaux vineyard: advancing the practical joint use of electromagnetic induction (EMI) and NDVI datasets for precision viticulture. *Precision Agriculture*. https://doi.org/10.1007/s11119-021-09788-w.

27. **Peruzzo L.**, Chou C., Wu Y., Schmutz M., Mary B., Petrov P., Gregory N., Blancaflor B.E., Liu X., and Hubbard S.S. 2020. Imaging of plant current pathways for non-invasive root phenotyping using a newly developed electrical current source density approach. *Plant and Soil Journal*. http://doi.org/10.1007/s11104-020-04529-w.

28. Mary B., **Peruzzo L.**, Boaga J., Cenni N., Schmutz M., Wu Y., Hubbard S.S., and Cassiani G. 2020. Time-lapse monitoring of root water uptake using electrical resistivity tomography and mise-à-la-masse: a vineyard infiltration experiment. *Soil Journal*. https://doi.org/10.5194/soil-6-95-2020.

29. Wu Y. and **Peruzzo L.**. 2020. Effects of salinity and pH on the spectral induced polarization signals of graphite particles. *Geophysical Journal International*. https://doi.org/10.1093/gji/ggaa087.

30. **Peruzzo L.**, Schmutz M., Franceschi M., Wu Y., and Hubbard S.S. 2018. The relative importance of saturated silica sand interfacial and pore fluid geochemistry on the spectral induced polarization response. *Journal of Geophysical Research: Biogeosciences*. https://doi.org/10.1029/2017JG004364.

31. Mary B., **Peruzzo L.**, Boaga J., Schmutz M., Wu Y., Hubbard S.S., and Cassiani G. 2018. Small-scale characterization of vine plant root water uptake via 3-D electrical resistivity tomography and mise-à-la-masse method. *Hydrology and Earth System Sciences*. https://doi.org/10.5194/hess-22-5427-2018.

32. Busato L., Boaga J., **Peruzzo L.**, Himi M., Cola S., Bersan S., and Cassiani G. 2016. Combined geophysical surveys for the characterization of a reconstructed river embankment. *Engineering Geology*. https://doi.org/10.1016/j.enggeo.2016.06.023.
33. Cassiani G., Boaga J., Busato L., **Peruzzo L.**, Himi M., and Casas A., 2016. Combined geophysical surveys for the characterization of a reconstructed river embankment. 22nd European Meeting of Environmental and Engineering Geophysics, Barcelona. *Near Surface Geoscience*. https://doi.org/10.3997/2214-4609.201602071.

Scientific Reviewer for

1. Water Resources Research
2. Soil
3. Engineering Geology
4. Groundwater
5. Hydrology and Earth System Science
6. Geoderma
7. Scientific Reports
8. Vadose Zone Journal
9. Plant Methods
10. Near Surface Geophysics
11. Geophysics Journal International
12. Archives of Agronomy and Soil Sciences
13. IEEE Transactions on Geoscience and Remote Sensing
14. AGU Journal of Geophysical Research: Biogeosciences
15. Frontiers in Water
16. AGU Book Proposals

Academic Service Roles

From Mar 2023 Member of graduation committees for the Master in Geophysics for Natural Risks and Resources, University of Padova.

Feb - Jul 2024 Member of the commission for the definition and evaluation of the requirements of the Cascade Funding within the PNRR - RETURN program, multi-risk science for resilient communities under a changing climate.

Oct 2024 - Feb 2026 Representative for the PNRR - RETURN task 2.5.2: Complements for multiple hazard scenarios from other vertical Spokes. Development of multi-risk scenarios in synergy with the program spokes for predisposing, hydrometeoric, and triggering factors. First-author of the corresponding deliverable 2.5.2, https://www.fondazionereturn.it/en/.

May 2026 Teaching responsibility for the module in applied geophysics and petrophysics of the Master "Progettazione per la transizione sostenibile dei territori post-industriali", 12 hours at the Monteponi campus, University of Cagliari. Original module name: "Geofisica mineraria: metodi geofisici (sismici, elettrici, magnetici ed elettromagnetici) e petrofisica per l'esplorazione delle risorse minerarie, con particolare attenzione alle materie prime critiche e strategiche."