PERSONAL INFORMATION

Roberto Seppi

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Date of birth 06/03/1970 | Nationality Italy

Current position Associate Professor in Physical Geography and Geomorphology - Department of Earth and Environmental Sciences, University of Pavia, Italy.

RESEARCH INTERESTS

Summary

My research activity focuses on glacial and periglacial geomorphology and on the study of the current state and changes of the Alpine cryosphere (glaciers, permafrost and snow cover) in relation to climate change. The research mainly consists in studies on the geomorphological evolution of the Alpine landscape, with regard to phenomena related to the presence of permafrost and glacial variations during the Holocene.
In my research I have applied methodologies such as large-scale geomorphological surveys and mapping, topographic and remote sensing surveys applied to geomorphological analysis, thermal (BTS, GST) and hydrological analysis. I have developed many years of experience in the analysis of alpine environments with the use of GIS and remote and proximal sensing tools, in the production of thematic cartography, in the collection of soil data and in the use of environmental monitoring tools (weather stations, environmental sensors, data loggers).

Bibliometric Indicators

SCOPUS (30/04/2022): h-index 15, citations 633, documents 38
Google Scholar (30/04/2022): h-index 17, citations 969, i10-index 28

WORK EXPERIENCE

01/10/2015 - current

Associate Professor in Physical Geography and Geomorphology

Department of Earth and Environmental Sciences, University of Pavia, Italy.

From 2007 to 2015

Assistant Professor in Physical Geography and Geomorphology

Department of Earth and Environmental Sciences, University of Pavia, Italy.

From 1999 to 2007

Free-lance Research Scientist in Glaciology and Glacial and Periglacial Geomorphology at the Natural Sciences Museum of Trento

Trento, Italy

EDUCATION

1996

M.Sc. in Natural Sciences (110/110 magna cum laude)

University of Milan, Italy

2006

Ph.D. in Earth Sciences

University of Pavia, Italy

PhD Thesis: *The rock glaciers of the Central Alps as environmental indicators (Adamello-Presanella Group and eastern sector of the Ortles-Cevedale Group).*
The aim of the PhD research was the census and the characterization of the rock glaciers in a wide sector of the Central Alps and the relationships between their distribution and the climatic conditions. Various methods have been applied to define the morphodynamic features of some selected rock glaciers and to study the characteristics of the permafrost they contain.

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	C1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

TEACHING ACTIVITY

2011 - today: Physical Geography and Cartography (9 CFU, in Italian), B. Sc. Geological Sciences and B.Sc. in Natural Sciences and Technologies, University of Pavia.

2020 - today: Geomorphology and Landscape Evolution (9 CFU, in Italian), B.Sc. in Geological Sciences and M.Sc. in Natural Sciences, University of Pavia.

2011 - today: Academic supervisor of the Course Basic Informatics (3 CFU) for the B.Sc. in Geological Sciences.

ACADEMIC ROLES

2014 - 2020: Member of the Academic Board of the PhD Program in Earth and Environmental Sciences (PhD cycles XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV and XXXVI).

SUPERVISOR ACTIVITY

2007 - today

- Supervisor of 25 B. Sc. thesis in Geological Sciences.
- Supervisor of 3 M. Sc. thesis in Applied Geological Sciences.
- Supervisor of the PhD thesis (Cycle XXVII 2012-2014) *Monitoring of Italian Glaciers: Official, Volunteered and Incidental Information.*
- Supervisor of the PhD thesis (Cycle XXVIII 2013-2015) *Alpine cryosphere dynamics assessment through the combined use of remote sensing and ground data.*
- Supervisor of the PhD thesis (Cycle XXXII 2016-2019) *Slow movements in alpine terrains analysed combining different technologies: SAR interferometry, UAV-based remote sensing and GPS measurements.*

RESEARCH PROJECTS

2022 - ongoing: Project “ROCK-ME Response of Rock Glaciers to global warming”, funded by EUREGIO and managed by University of Bolzano, Fondazione Edmund Mach, Austrian Academy of Science.
Role: scientific collaborator.

2021 - ongoing: Five-year project between University of Pavia (Dept. of Earth and Environmental Sciences) and Adamello Brenta UNESCO Geopark for developing the geomorphological map of the protected area., funded by Adamello Brenta UNESCO Geopark.
Role: scientific coordinator.

2013 - ongoing: Research agreement between University of Pavia (Dept. of Earth and Environmental Sciences) and Autonomous Province of Trento (Geological Survey) for permafrost investigations and monitoring in Trentino.
Role: scientific coordinator.

2017 -2019: Project “ALPSMOTION- ALPine Slow slope MOvement moniToring and detectION with remote and proximal sensing”, managed by EURAC (European Academy of Bolzano) and funded by Autonomous Province of Bolzano.
Role: co-investigator and scientific coordinator of a PhD funded by the project.

2013 - 2016: Project PRIN 2010 – 2011 “Dinamica dei sistemi morfoclimatici in risposta ai cambiamenti globali e rischi geomorfologici indotti”, funded by MIUR.
Role: participant.

2014 - 2016: Project “ALPSAR - Alpine glacier zone detection using polarimetric C band” (ID SOAR-EU 16827) Announcement of Opportunity di Canadian Space Agency. Managed by EURAC (European Academy of Bolzano).
Role: co-investigator.

2014 - 2016	Project "ALARM - ALpine and ARtic cryosphere changes Monitoring usign X- and C-band SAR" (ID 2925-5231). Joint Announcement of Opportunity COSMO-SkyMed/RADARSAT-2, Italian Space Agency and Canadian Space Agency. Managed by EURAC (European Academy of Bolzano). Role: co-investigator.
2009 – 2014	Ortles Project: "An international research project on the cryosphere of the Mount Ortles (South Tyrol, Italy)", managed by University of Ohio and funded by National Science Foundation and Autonomous Province of Bolzano. Role: co-investigator.
2010 - 2014	IAEA-coordinated research project: "Use of environmental isotopes in assessing water resources in snow-, glacier- and permafrost-dominated areas under changing climatic conditions". Funded by IAEA. Role: coordinator of the research section on permafrost.
2008 - 2011	Alpine Space Project: "PermaNET – Long-term permafrost monitoring network". Funded by the European Regional Development Fund (ERDF) and coordinated by the Autonomous Province of Bolzano. Role: scientific coordinator of the research section developed in the Autonomous Province of Trento.

FURTHER INFORMATION

Scientific reviews

Frontiers in Earth Sciences; Earth Surface Processes and Landforms; Science of the Total Environment; Geografia Fisica e Dinamica Quaternaria.

Editorial activity

2019 – 2020 Guest editor of the international scientific journal "Water", special issue "Transformation of Glacial and Periglacial Environments in Mountain Regions"

External thesis reviewer

External reviewer of four PhD thesis for the University of Torino (2017), University of Bolzano (2021), University of Udine (2021), University of Milano Bicocca (2022).

Memberships

- CGI (Italian Glaciological Committee)
- IPA (International Permafrost Association)
- AIGEO (Italian Association of Physical Geography and Geomorphology)

Winter and summer schools

- Co-organizer and lecturer at the International Summer School "Slope dynamics and responses of surface processes to climate change: the case of the Mont Blanc massif", didactic program of the PhD in Earth and Environmental Sciences - University of Pavia, held in Courmayeur (Aosta, Italy), 19 – 22 September 2017.
- Co-organizer and lecturer at the International Summer School "Multi-risk assessment of alpine environment - the case study of northern piedmont (NW italy)", didactic program of the PhD in Earth and Environmental Sciences - University of Pavia, held in Crodo (Verbania, Italy), 10 – 13 July 2018.
- Co-organizer of the International Summer School "Investigating alpine permafrost dynamics from space to the field", didactic program of the PhD in Earth and Environmental Sciences - University of Pavia and Alpsmotion Project EURAC, held in Bolzano (Italy), 16-19 July 2019.

ATTACHMENT

- List of publications in the last ten years.

Personal data

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Date: Pavia, 30 April 2022

Signature: Roberto Seppi

List of publications in the last ten years

1. Marta, S., Azzoni, R. S., Fugazza, D., Tielidze, L., Chand, P., Sieron, K., Almond, P., Ambrosini, R., Anthelme, F., Alviz Gazitúa, P., Bhambri, R., Bonin, A., Caccianiga, M., Cauvy-Fraunié, S., Ceballos Lievano, J. L., Clague, J., Cochachín Rapre, J. A., Dangles, O., Deline, P., … Ficetola, G. F. (2021). The Retreat of Mountain Glaciers since the Little Ice Age: A Spatially Explicit Database. Data, 6(10), 107. https://doi.org/10.3390/data6100107
2. Gobbi, M., Ambrosini, R., Casarotto, C., Diolaiuti, G., Ficetola, G. F., Lencioni, V., Seppi, R., Smiraglia, C., Tampucci, D., Valle, B., & Caccianiga, M. (2021). Vanishing permanent glaciers: climate change is threatening a European Union habitat (Code 8340) and its poorly known biodiversity. Biodiversity and Conservation, 30(7), 2267–2276. https://doi.org/10.1007/s10531-021-02185-9
3. Tolotti, M., Cerasino, L., Donati, C., Pindo, M., Rogora, M., Seppi, R., & Albanese, D. (2020). Alpine headwaters emerging from glaciers and rock glaciers host different bacterial communities: Ecological implications for the future. Science of the Total Environment, 717. https://doi.org/10.1016/j.scitotenv.2020.137101
4. Bertone, A., Zucca, F., Marin, C., Notarnicola, C., Cuozzo, G., Krainer, K., Mair, V., Riccardi, P., Callegari, M., & Seppi, R. (2019). An unsupervised method to detect rock glacier activity by using Sentinel-1 SAR interferometric coherence: A regional-scale study in the Eastern European Alps. Remote Sensing, 11(14). https://doi.org/10.3390/rs11141711
5. Zuecco, G., Carturan, L., De Blasi, F., Seppi, R., Zanoner, T., Penna, D., Borga, M., Carton, A., & Dalla Fontana, G. (2019). Understanding hydrological processes in glacierized catchments: evidence and implications of highly-variable isotopic and electrical conductivity data. Hydrological Processes, 33(5), 816–832. https://doi.org/10.1002/hyp.13366
6. Seppi, R., Carturan, L., Carton, A., Zanoner, T., Zumiani, M., Cazorzi, F., Bertone, A., Baroni, C., & Salvatore, M. C. (2019). Decoupled kinematics of two neighbouring permafrost creeping landforms in the Eastern Italian Alps. Earth Surface Processes and Landforms, 44(13), 2703–2719. https://doi.org/10.1002/esp.4698
7. Rotta, F., Cerasino, L., Occhipinti-Ambrogi, A., Rogora, M., Seppi, R., & Tolotti, M. (2018). Diatom diversity in headwaters influenced by permafrost thawing: First evidence from the Central Italian Alps. Advances in Oceanography and Limnology, 9(2), 79–96. https://doi.org/10.4081/aiol.2018.7929
8. Zanoner, T., Carton, A., Seppi, R., Carturan, L., Baroni, C., Salvatore, M. C., & Zumiani, M. (2017). Little Ice Age mapping as a tool for identifying hazard in the paraglacial environment: The case study of Trentino (Eastern Italian Alps). Geomorphology, 295, 551–562. https://doi.org/10.1016/j.geomorph.2017.08.014
9. Baroni, C., Casale, S., Salvatore, M. C., Ivy-Ochs, S., Christl, M., Carturan, L., Seppi, R., & Carton, A. (2017). Double response of glaciers in the Upper Peio Valley (Rhaetian Alps, Italy) to the Younger Dryas climatic deterioration. Boreas, 46(4), 783–798. https://doi.org/10.1111/bor.12284
10. Tampucci, D., Gobbi, M., Marano, G., Boracchi, P., Boffa, G., Ballarin, F., Pantini, P., Seppi, R., Compostella, C., & Caccianiga, M. (2017). Ecology of active rock glaciers and surrounding landforms: climate, soil, plants and arthropods. Boreas, 46(2), 185–198. https://doi.org/10.1111/bor.12219
11. Gabrielli, P., Barbante, C., Bertagna, G., Bertó, M., Binder, D., Carton, A., Carturan, L., Cazorzi, F., Cozzi, G., Dalla Fontana, G., Davis, M., De Blasi, F., Dinale, R., Dragà, G., Dreossi, G., Festi, D., Frezzotti, M., Gabrieli, J., Galos, S. P., … Zennaro, P. (2016). Age of the Mt. Ortles ice cores, the Tyrolean Iceman and glaciation of the highest summit of South Tyrol since the Northern Hemisphere Climatic Optimum. The Cryosphere, 10(6), 2779–2797. https://doi.org/10.5194/tc-10-2779-2016
12. Carturan, L., Zuecco, G., Seppi, R., Zanoner, T., Borga, M., Carton, A., & Dalla Fontana, G. (2016). Catchment-Scale Permafrost Mapping using Spring Water Characteristics. Permafrost and Periglacial Processes, 27(3), 253–270. https://doi.org/10.1002/ppp.1875
13. Callegari, M., Carturan, L., Marin, C., Notarnicola, C., Rastner, P., Seppi, R., & Zucca, F. (2016). A Pol-SAR Analysis for Alpine Glacier Classification and Snowline Altitude Retrieval. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 9(7), 3106–3121. https://doi.org/10.1109/JSTARS.2016.2587819
14. Seppi, R., Zanoner, T., Carton, A., Bondesan, A., Francese, R., Carturan, L., Zumiani, M., Giorgi, M., & Ninfo, A. (2015). Current transition from glacial to periglacial processes in the Dolomites (South-Eastern Alps). Geomorphology, 228, 71–86. https://doi.org/10.1016/j.geomorph.2014.08.025
15. Gobbi, M., Ballarin, F., Compostella, C., Lencioni, V., Seppi, R., Tampucci, D., & Caccianiga, M. (2014). Physical and biological features of an active rock glacier in the Italian Alps. The Holocene, 24(11), 1624–1631. https://doi.org/10.1177/0959683614544050
16. Carturan, L., Baroni, C., Carton, A., Cazorzi, F., Fontana, G. D., Delpero, C., Salvatore, M. C., Seppi, R., & Zanoner, T. (2014). Reconstructing fluctuations of La Mare Glacier (Eastern Italian Alps) in the Late Holocene: new evidence for a Little Ice Age maximum around 1600 ad. Geografiska Annaler: Series A, Physical Geography, 96(3), 287–306. https://doi.org/10.1111/geoa.12048

17. Carturan, L., Baroni, C., Becker, M., Bellin, A., Cainelli, O., Carton, A., Casarotto, C., Dalla Fontana, G., Godio, A., Martinelli, T., Salvatore, M. C., & Seppi, R. (2013). Decay of a long-term monitored glacier: Careser Glacier (Ortles-Cevedale, European Alps). Cryosphere, 7(6), 1819–1838. https://doi.org/10.5194/tc-7-1819-2013
18. Carturan, L., Filippi, R., Seppi, R., Gabrielli, P., Notarnicola, C., Bertoldi, L., Paul, F., Rastner, P., Cazorzi, F., Dinale, R., & Dalla Fontana, G. (2013). Area and volume loss of the glaciers in the Ortles-Cevedale group (Eastern Italian Alps): Controls and imbalance of the remaining glaciers. Cryosphere, 7(5), 1339–1359. https://doi.org/10.5194/tc-7-1339-2013
19. Seppi, R., Carton, A., Zumiani, M., Dall'Amico, M., Zampedri, G., & Rigon, R. (2012). Inventory, distribution and topographic features of rock glaciers in the southern region of the Eastern Italian Alps (Trentino). Geografia Fisica e Dinamica Quaternaria, 35(2), 185–197. https://doi.org/10.4461/GFDQ.2012.35.17
20. Cremonese, E., Gruber, S., Phillips, M., Pogliotti, P., Boeckli, L., Noetzli, J., Suter, C., Bodin, X., Crepaz, A., Kellerer-Pirklbauer, A., Lang, K., Letey, S., Mair, V., Morra di Cella, U., Ravanel, L., Scapozza, C., Seppi, R., & Zischg, A. (2011). Brief Communication: "An inventory of permafrost evidence for the European Alps." The Cryosphere, 5(3), 651–657. https://doi.org/10.5194/tc-5-651-2011
21. Gabrieli, J., Carturan, L., Gabrielli, P., Kehrwald, N., Turetta, C., Cozzi, G., Spolaor, A., Dinale, R., Staffler, H., Seppi, R., dalla Fontana, G., Thompson, L., & Barbante, C. (2011). Impact of Po Valley emissions on the highest glacier of the Eastern European Alps. Atmospheric Chemistry and Physics, 11(15), 8087–8102. https://doi.org/10.5194/acp-11-8087-2011