



Dipartimento di Scienze Agrarie, Forestali e Alimentari
Largo P. Braccini, 2 - 10095 Grugliasco (TO)

Grugliasco, lì 20 Febbraio 2020

CURRICULUM VITAE

Prof. Michele Freppaz

Associate Professor

University of Torino, Department of excellence Agricultural, Forest and Food Sciences

Main Research Interests:

Associate professor in soil science and snow science at the University of Torino, received his PhD in Soil Science with an emphasis on the processes at the soil/snow interface. He focuses his research activity on the genesis and functioning of mountain soils and the comprehension of the contribution of soil properties to both fast (snow avalanches) and slow (snow gliding) snow movements. Particular interest is placed also on the snow avalanche dynamics and the impact of snow avalanches on mountain ecosystems, with a specific focus on soil erosion processes. Moreover, he worked on the impacts of cryosphere degradation on inorganic chemistry of surface fresh water. He has current and past research activities in many of the mountain ranges throughout the world, including the Rocky Mountains, the Andes and the Himalayas.

Memberships and scientific responsibilities:

-President of the Research Centre on Natural Risks in Mountain and Hilly Environments (NatRisk) (www.natrisk.unito)

-Scientific Director of the Summer School IPROMO (International Programme on Research and Training on Sustainable Management of Mountain Areas), in collaboration with FAO-Mountain Partnership (<http://www.fao.org/mountain-partnership/our-work/capacitydevelopment/ipromo/en/>)

-Principal Investigator of the LTER site "Northwestern Italian Alps" (www.lteritalia)

-Member of the Scientific Committee of Accademia Europea di Bolzano - EURAC Research (Bolzano-Italy)

Higher Education:

2000: PhD in Soil Science at the University of Torino

Work Experience:

-2016: National Scientific Habilitation (ASN) as Full Professor in Pedology

-2014-present: Associate Professor at the University of Torino (teaching the disciplines: Prevention of soil erosion, landslides and snow avalanches; Soil ecology, snow ecology and principles of Alpine meteorology; Soil Survey Laboratory)

- 2005-2014: Researcher at the University of Torino
- 2010: Visiting Professor at the Institute of Arctic and Alpine Research - INSTAAR, University of Colorado, Boulder, USA
- 2000-2004: Post Doc at the Swiss Federal institute for Snow and Avalanche Research, Davos, CH
- 2000: Visiting scientist at the Macaulay Land Use Research Institute, Aberdeen, UK
- 1999: Visiting scientist at the Swiss Federal institute for Snow and Avalanche Research, Davos, CH

Membership in Professional Societies:

- Italian Society of Pedology (SIPE)
- Italian Soil Science Society (SISS)
- International Union of Soil Science (IUSS)

National and International grants:

- Progetto di ricerca di rilevanza nazionale (PRIN 2002): Indicatori fisici e chimici dell'evoluzione di suoli antropogenici costruiti per gli specifici usi degli sport invernali in ambiente alpino. (Research Unit Member)
- Progetto di ricerca di rilevanza nazionale (PRIN 2007): Impatto dello sci sull'ambiente alpino ed appenninico. Protocollo: 2007BLMR3X_002. Unità di ricerca: Valutazione della temperatura e della dinamica dell'azoto in suoli di piste da sci in ambiente alpino ed appenninico. (Research Unit Responsible)
- Progetto di ricerca di rilevanza nazionale (PRIN 2010-2011): Dinamica dei sistemi morfoclimatici in risposta ai cambiamenti globali e rischi geomorfologici indotti. Protocollo 2010AYKTAB_004. Unità di Ricerca: Interazioni fra clima, ambiente montano e collinare: effetti dei cambiamenti globali e pericoli naturali indotti nell'Italia nord occidentale. (Research Unit Responsible)
- Proejct of Interest CNR Next Data: Harmonisation and standards for existing and newly collected Data and MetaData on LTER sites in Italian Mountain ecosystems. (Research Unit Responsible)
- Incarico di collaborazione della Regione Valle d'Aosta al DIVAPRA per Elaborazione dei dati di temperatura del manto nevoso raccolti dalle stazioni Nivo-meteorologiche automatiche gestite dal Centro Funzionale della Valle d'Aosta nell'ambito del P.O. di Cooperazione territoriale europea transfrontaliera Italia/Francia (Alpi) 2007/2013 Alcotra – Progetto RiskNat “Gestione in sicurezza dei territori di montagna transfrontalieri”. (Research Unit Responsible)
- Convenzione tra la Regione Autonoma Valle d'Aosta e il Dipartimento di Valorizzazione e Protezione delle Risorse Agroforestali dell'Università degli Studi di Torino per il Servizio di ricerca per lo svolgimento di attività previste nell'ambito del Progetto 048 “Dynamiques des avalanches: déclenchement et interaction écoulement-obstacles” - DYNAVAL – Obiettivo cooperazione territoriale europea Italia/Francia (Alpi) 2007-2013. (Research Unit Member)
- Convenzione tra la Regione Autonoma Valle d'Aosta e il Dipartimento di Scienze Agrarie Forestali e Alimentari dell'Università degli Studi di Torino per il Servizio di ricerca per lo svolgimento di attività previste nell'ambito del Progetto 144 “Monitoring for the Avalanche Prevision, Prediction and Protection” - MAP3 – Obiettivo cooperazione territoriale europea Italia/Francia (Alpi) 2007-2013. (Research Unit Member)

- Convenzione del DIVAPRA dell'Università di Torino con l'ARPA Piemonte per la collaborazione al Progetto EU-INTERREG "Biodiversità: una ricchezza da conservare. (Research Unit Responsible)
- FP7 - PEOPLE COFUND Project: The Effect of Root Reinforcement As an indicator in soil SUSceptibility mapping in mountain ecosystems (TERRASUS) nell'ambito dell'iniziativa FP7 - PEOPLE COFUND nr. 609402 - "2020 Researchers Train2Move". (Research Unit Responsible)
- Interreg Alpine Space project Links4Soils (ASP399): Caring for Soil—Where Our Roots Grow. (<http://www.alpinespace.eu/projects/links4soils/en/the-project>). (Research Unit Responsible)

Organization of scientific sessions at international conferences

- CR6.3 Biogeochemistry and Soil genesis in seasonally snow-covered areas. European Geoscience Union General Assembly, Vienna, 24-04-2009
- SSS3: Stability and functions of mountain soils. European Geoscience Union General Assembly, Vienna, 06-05-2010
- Forest-snow interactions. Davos Atmosphere and Cryosphere Assembly 2013, Davos, CH, 08-07-2013

Indexed articles:

number (Scopus, February 20, 2020): 85
h-index: 19

Referee for International Journals

Global Change Biology, Forest Ecology and Management, Climatic Change, Acta Oecologica, Landscape and Urban Planning, Oecologia, Journal of Applied Ecology, Cold Regions Science and Technology, Climate of the Past, Boreal Environment Research, Biogeochemistry, Arctic and Alpine Research, Environmental Earth Sciences, Journal of Soils and Sediments, Biology and Fertility of Soils, Science of the Total Environment, Plos One, Natural Hazards and Earth System Sciences, Biogeosciences, Journal of Glaciology, Journal of Mountain Science, Journal of Geochemical Exploration, Geoderma, Catena, The Cryosphere, Climate Research, Environmental Research Letters

Recent Publications (2018-2019)

- Poratelli, F., Accastello, C., Freppaz, M., Brun, F. Integrated grey-green management of avalanche risk: Economic and ecologic evidences from the Western Italian Alps (2020) International Journal of Disaster Risk Reduction, 46, art. no. 101502, DOI: 10.1016/j.ijdr.2020.101502
- Maggioni, M., Godone, D., Frigo, B., Freppaz, M. Snow gliding and glide-snow avalanches: Recent outcomes from two experimental test sites in Aosta Valley (northwestern Italian Alps) (2019) Natural Hazards and Earth System Sciences, 19 (11), pp. 2667-2676. DOI: 10.5194/nhess-19-2667-2019
- Maggioni, M., Barbero, M., Barpi, F., Borri-Brunetto, M., De Biagi, V., Freppaz, M., Frigo, B., Pallara, O., Chiaia, B. Snow avalanche impact measurements at the seehore test site in aosta valley (NW Italian Alps) (2019) Geosciences (Switzerland), 9 (11), art. no. 471, DOI: 10.3390/geosciences9110471
- Colombo, N., Bocchiola, D., Martin, M., Confortola, G., Salerno, F., Godone, D., D'Amico, M.E., Freppaz, M. High export of nitrogen and dissolved organic carbon from an Alpine glacier (Indren Glacier, NW Italian Alps) (2019) Aquatic Sciences, 81 (4), art. no. 74. DOI: 10.1007/s00027-019-0670-z
- Colombo, N., Salerno, F., Martin, M., Malandrino, M., Giardino, M., Serra, E., Godone, D., Said-Pullicino, D., Fratianni, S., Paro, L., Tartari, G., Freppaz, M. Influence of permafrost, rock and ice glaciers on chemistry

- of high-elevation ponds (NW Italian Alps) (2019) *Science of the Total Environment*, 685, pp. 886-901. DOI: 10.1016/j.scitotenv.2019.06.233
- Mania, I., Gorra, R., Colombo, N., Freppaz, M., Martin, M., Anesio, A.M. Prokaryotic Diversity and Distribution in Different Habitats of an Alpine Rock Glacier-Pond System (2019) *Microbial Ecology*, 78 (1), pp. 70-84. DOI: 10.1007/s00248-018-1272-3
- Martelletti, S., Meloni, F., Freppaz, M., Viglietti, D., Lonati, M., Ravetto Enri, S., Motta, R., Nosenzo, A. Effect of zeolite addition on soil properties and plant establishment during forest restoration (2019) *Ecological Engineering*, 132, pp. 13-22. DOI: 10.1016/j.ecoleng.2019.03.011
- Mazzocchi, M.G., Capotondi, L., Freppaz, M., Lugliè, A., Campanaro, A. Editorial (2019) *Nature Conservation*, 34, pp. 1-8. DOI: 10.3897/natureconservation.34.35517
- Freppaz, M., Viglietti, D., Balestrini, R., Lonati, M., Colombo, N. Climatic and pedoclimatic factors driving C and N dynamics in soil and surface water in the alpine tundra (NW-Italian Alps) (2019) *Nature Conservation*, 34, pp. 67-90. DOI: 10.3897/natureconservation.34.30737
- Balestrini, R., Delconte, C.A., Buffagni, A., Fumagalli, A., Freppaz, M., Buzzetti, I., Calvo, E. Dynamic of nitrogen and dissolved organic carbon in an alpine forested catchment: Atmospheric deposition and soil solution trends (2019) *Nature Conservation*, 34, pp. 41-66. DOI: 10.3897/natureconservation.34.30738
- D'Amico, M.E., Pintaldi, E., Catoni, M., Freppaz, M., Bonifacio, E. Pleistocene periglacial imprinting on polygenetic soils and paleosols in the SW Italian Alps (2019) *Catena*, 174, pp. 269-284. DOI: 10.1016/j.catena.2018.11.019
- Möhl, P., Mörsdorf, M.A., Dawes, M.A., Hagedorn, F., Bebi, P., Viglietti, D., Freppaz, M., Wipf, S., Körner, C., Thomas, F.M., Rixen, C. Twelve years of low nutrient input stimulates growth of trees and dwarf shrubs in the treeline ecotone (2019) *Journal of Ecology*, 107 (2), pp. 768-780. DOI: 10.1111/1365-2745.13073
- Pintaldi, E., Viglietti, D., D'Amico, M.E., Magnani, A., Freppaz, M. Abiotic parameters and pedogenesis as controlling factors for soil C and N cycling along an elevational gradient in a subalpine Larch forest (NW Italy) (2019) *Forests*, 10 (8), art. no. 614, DOI: 10.3390/f10080614
- Colombo, N., Gruber, S., Martin, M., Malandrino, M., Magnani, A., Godone, D., Freppaz, M., Fratianni, S., Salerno, F. Rainfall as primary driver of discharge and solute export from rock glaciers: The Col d'Olen Rock Glacier in the NW Italian Alps (2018) *Science of the Total Environment*, 639, pp. 316-330. DOI: 10.1016/j.scitotenv.2018.05.098
- Malavasi, M., Acosta, A.T.R., Carranza, M.L., Bartolozzi, L., Basset, A., Bassignana, M., Campanaro, A., Canullo, R., Carruggio, F., Cavallaro, V., Cianferoni, F., Cindolo, C., Cocciuffa, C., Corriero, G., D'Amico, F.S., Forte, L., Freppaz, M., Mantino, F., Matteucci, G., Pierri, C., Stanisci, A., Colangelo, P. Plant invasions in Italy: An integrative approach using the European LifeWatch infrastructure database (2018) *Ecological Indicators*, 91, pp. 182-188. DOI: 10.1016/j.ecolind.2018.03.038
- Rogora, M., Frate, L., Carranza, M.L., Freppaz, M., Stanisci, A., Bertani, I., Bottarin, R., Brambilla, A., Canullo, R., Carbognani, M., Cerrato, C., Chelli, S., Cremonese, E., Cutini, M., Di Musciano, M., Erschbamer, B., Godone, D., Iocchi, M., Isabellon, M., Magnani, A., Mazzola, L., Morra di Cella, U., Pauli, H., Petey, M., Petriccione, B., Porro, F., Psenner, R., Rossetti, G., Scotti, A., Sommaruga, R., Tappeiner, U., Theurillat, J.-P., Tomaselli, M., Viglietti, D., Viterbi, R., Vittoz, P., Winkler, M., Matteucci, G. Assessment of climate change effects on mountain ecosystems through a cross-site analysis in the Alps and Apennines (2018) *Science of the Total Environment*, 624, pp. 1429-1442. DOI: 10.1016/j.scitotenv.2017.12.155
- Godio, A., Frigo, B., Chiaia, B., Maggioni, P., Freppaz, M., Ceaglio, E., Dellavedova, P. Integration of upward GPR and water content reflectometry to monitor snow properties (2018) *Near Surface Geophysics*, 16 (2), pp. 154-163. DOI: 10.3997/1873-0604.2017060
- Colombo, N., Salerno, F., Gruber, S., Freppaz, M., Williams, M., Fratianni, S., Giardino, M. Review: Impacts

- of permafrost degradation on inorganic chemistry of surface fresh water (2018) *Global and Planetary Change*, 162, pp. 69-83. DOI: 10.1016/j.gloplacha.2017.11.017
- Martelletti, S., Lingua, E., Meloni, F., Freppaz, M., Motta, R., Nosenzo, A., Marzano, R. Microsite manipulation in lowland oak forest restoration results in indirect effects on acorn predation (2018) *Forest Ecology and Management*, 411, pp. 27-34. DOI: 10.1016/j.foreco.2018.01.007
- Magnani, A., Ajmone-Marsan, F., D'Amico, M., Balestrini, R., Viviano, G., Salerno, F., Freppaz, M. Soil properties and trace elements distribution along an altitudinal gradient on the southern slope of Mt. Everest, Nepal (2018) *Catena*, 162, pp. 61-71. DOI: 10.1016/j.catena.2017.11.015
- Freppaz, M., Pintaldi, E., Magnani, A., Viglietti, D., Williams, M.W. Topsoil and snow: a continuum system (2018) *Applied Soil Ecology*, 123, pp. 435-440. DOI: 10.1016/j.apsoil.2017.06.029
- Pintaldi, E., D'Amico, M.E., Stanchi, S., Catoni, M., Freppaz, M., Bonifacio, E. Humus forms affect soil susceptibility to water erosion in the Western Italian Alps (2018) *Applied Soil Ecology*, 123, pp. 478-483. DOI: 10.1016/j.apsoil.2017.04.007

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