

CURRICULUM VITAE

Prof. Giovanni LEONELLI PhD

1. PERSONAL INFORMATION

Name **LEONELLI, Giovanni**
Address University of Parma - Dept. of Chemistry, Life Sciences and Environmental Sustainability Sciences, Parco Area delle Scienze, 157/A, 43124 PARMA – Italy
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e-mail giovanni.leonelli@unipr.it

Nationality Italian
Birth date 18 JANUARY 1974

2. EDUCATIONAL QUALIFICATION

- I received the Master Degree in Natural Sciences from the University of Milano, defending a thesis entitled "Study of the forest upper tree limits in two sample area in upper Val Brembana (BG). Present dynamics and dendroclimatic analysis of European larch (*Larix decidua* Mill.)". Final mark 108/110 (21/10/2003).
- I won an award from the academic body Lombard institute Academy of Science and Letters, for the best master thesis in Natural and Environmental Sciences defended in Lombardy, Italy, in the year 2003, (February 2004).
- I have been responsible of the research project entitled "Climate sensitivity of trembling aspen radial growth along a productivity gradient in northeastern British Columbia, Canada" after a selection between several candidates. For this project I received a scholarship from the *Industrial Sustainable Forest Management Chair* to develop the study at University of Quebec, UQAT (Canada), (January-June 2004).
- Work experience at the Laboratory of Dendrogeomorphology of Department of Earth Sciences (DST), University of Milan, developing a research project for organizing meteorological series from several alpine stations, quality control and dendroclimatic analysis on tree-ring chronologies from the Central Italian Alps (September-October 2004).
- At the regular end of the XX cycle, I received the PhD in Natural and Environmental Sciences from University of Milano defending the thesis entitled "Climate and glacier signals in tree-ring growth of alpine conifers" (24/01/2008).
- Researcher at the public Environment Protection Agency ARPA Valle d'Aosta, with the collaboration of University of Milano, developing a post-doc research project entitled: "*Larix decidua* adaptation and responses to climate change in the Alpine environment: analysis at different spatio-temporal scales in Valle d'Aosta" (03/12/2007-Jan. 2010).
- Postdoc researcher with Ministerial Scholarship at Università degli Studi di Milano, Earth Sciences Dept., for developing the research project entitled: Post Little Ice Age climate change impacts on hydrological and glacio-geomorphological processes in high-mountain environments derived from proxy-based reconstructions (01/04/2010-31/03/2014).
- Post-doc researcher at the Università degli Studi di Milano-Bicocca, working on the project NEXTDATA for participating to the creation of a national system for collecting palaeoclimatic data (1/7/2014-31/12/2015).
- Postdoc researcher with Ministerial Scholarship at the Università degli Studi di Milano-Bicocca, working on the project CLIMATE-ON (1/1/2016-30/12/2018).
- I have received the Ministry of Instruction's diploma for the professional services as 'Agrotecnico e Agrotecnico Laureato' (13/12/2018).

3. CURRENT POSITION

Since December 31, 2018 I am associate professor at University of Parma, Italy, chair of Physical Geography and Geomorphology, teaching the classes of:

- Physical Geography (Bsc in Geology): a.y. 2019/2020 up to 2022/2023;
- Cartography and GIS (Bsc in Geology); a.y. 2018/2019 up to 2022/2023.

- Applied Geomorphology and Geomorphological Risk (Msc in Geological Sciences and Technologies): a.y. 2018/2019 and 2019/2020;
- Geomorphological Hazards and Quaternary climate change (Msc in Geological Sciences applied to Environmental Sustainability). a.y. 2020/2021 up to 2022/2023.

Since September 9, 2021 I am scientific responsible of the 'Denđro Lab' at the SCVSA Dept. University of Parma, developing research and innovation in dendrochronology, in the fields of Geomorphology, Climate Change and the Environment.

I have been teaching the following classes:

Academic year: 2022/2023

CARTOGRAFIA E GIS

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2022/2023

GEOGRAFIA FISICA

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2022/2023

PERICOLOSITA' GEOMORFOLOGICHE E CAMBIAMENTI CLIMATICI DEL QUATERNARIO

Anno di corso: 1 - Corso di Laurea Magistrale - SCIENZE GEOLOGICHE APPLICATE ALLA SOSTENIBILITA' AMBIENTALE - Coorte: 2022/2023

Academic year: 2021/2022

CARTOGRAFIA E GIS

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2021/2022

GEOGRAFIA FISICA

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2021/2022

PERICOLOSITA' GEOMORFOLOGICHE E CAMBIAMENTI CLIMATICI DEL QUATERNARIO

Anno di corso: 1 - Corso di Laurea Magistrale - SCIENZE GEOLOGICHE APPLICATE ALLA SOSTENIBILITA' AMBIENTALE - Coorte: 2021/2022

Academic year: 2020/2021

CARTOGRAFIA E GIS

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2020/2021

GEOGRAFIA FISICA

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2020/2021

PERICOLOSITA' GEOMORFOLOGICHE E CAMBIAMENTI CLIMATICI DEL QUATERNARIO

Anno di corso: 1 - Corso di Laurea Magistrale - SCIENZE GEOLOGICHE APPLICATE ALLA SOSTENIBILITA' AMBIENTALE - Coorte: 2020/2021

Academic year: 2019/2020

CARTOGRAFIA E GIS

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2019/2020

GEOGRAFIA FISICA

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2019/2020

GEOMORFOLOGIA APPLICATA E RISCHIO GEOMORFOLOGICO

Anno di corso: 1 - Corso di Laurea Magistrale - SCIENZE E TECNOLOGIE GEOLOGICHE - Coorte: 2019/2020

Academic year: 2018/2019

CARTOGRAFIA E GIS

Anno di corso: 1 - Laurea triennale (DM 270) - SCIENZE GEOLOGICHE - Coorte: 2018/2019

GEOMORFOLOGIA APPLICATA E RISCHIO GEOMORFOLOGICO

Anno di corso: 1 - Corso di Laurea Magistrale - SCIENZE E TECNOLOGIE GEOLOGICHE - Coorte: 2018/2019

4. DIDACTICAL AND ORGANIZATIONAL SKILLS before being professor at University of Parma

- I have lectured several seminars within the Master Course of Physical Geography, Environmental Geology and Geomorphology at University of Milano (2004-2009 and 2010-2014), on chemical and physical weathering of rocks, geomorphological processes in high-mountain environments, landforms and the influence of climate, absolute dating, and definition of risk:

Environmental Geology:

- Academic Year 2004-2005 seminar entitled "Il segnale climatico nelle cronologie di accrescimento radiale degli alberi";
- Academic Year 2005-2006 seminar entitled "I rifiuti: il problema dell'inquinamento, l'ambiente, la società";
- Academic Year 2006-2007 seminar entitled "I rifiuti: il problema dell'inquinamento, l'ambiente, la società";
- Academic Year 2007-2008 seminar entitled "Analisi dei segnali glaciale e climatico nell'accrescimento radiale di conifere da siti alpini di alta quota".

Physical Geography:

- Academic Year 2006-2007 seminario intitolato "Processi di alterazione chimica".

First Level Master entitled intitolato "Sciences for the cultural heritage":

- In January 2005 seminar entitled "Cronologie di riferimento"

Applied Geomorphology:

- Academic Year 2008-2009 seminars entitled "Forme del paesaggio come indicatori paleoclimatici" and
- "Il segnale climatico nelle cronologie di accrescimento radiale degli alberi"

Complements of Earth Sciences:

- In March 2011, seminar entitled "Pericolosità geomorfologiche associate a processi superficiali"

Palaeoenvironments:

Academic years 2010-11, 14 seminars for the module Dendroclimatology

Dendroclimatology:

similar number of seminars as above for the Academic Years 2011-12; 2012-13; 2013-14.

- I have examined the students within the Master Course of Physical Geography and Geomorphology at University of Milano (2004-2008 and 2010-2014).
- I have been co-supervisor of about 20 Bachelor and Master Theses of University of Milano and University of Florence (2006-2014).
- I have been co-supervisor of a PhD thesis of University of Pisa.
- I have co-organized and co-realized several field work activities for the bachelor and master students of the Course of Natural Science of University of Milano, teaching sampling strategies, coordinating the activities for the study of slope instability, deglaciation problems, climate-related vegetation dynamics, geomorphological constraints and human impacts in high-mountains environments (2005-2007).

Invited speaker at Università della Valle d'Aosta, master course in Scienze della Formazione Primaria:

In January 2010, seminar entitled "Cambiamento Climatico e risposte ambientali"

Financed tutorial activities:

2014 Collaboration activity Art. 45 Università degli Studi di Milano, Earth Science Dept., via Mangiagalli 34, 20133 MILANO
Professional service for integrative didactic and tutoring of students, assistance to exams

2014 Collaboration activity Art. 45 Università degli Studi di Milano, Earth Science Dept., via Mangiagalli 34, 20133 MILANO
Professional service for tutoring and didactical activities within the didactical disciplines in the abilitation classes A057/A058/A059/A060.

a.y. 2012-2013 Collaboration activity Art. 47 Università degli Studi di Milano, Earth Science Dept., via Mangiagalli 34, 20133 MILANO
Professional service for enhancing the didactic and tutoring of students, assistance to exams

a.y. 2011-2012 Collaboration activity Art. 47 Università degli Studi di Milano, Earth Science Dept., via Mangiagalli 34, 20133 MILANO
Professional service for enhancing the didactic and tutoring of students, assistance to exams

a.y. 2010-2011 Collaboration activity Art. 47 Università degli Studi di Milano, Earth Science Dept., via Mangiagalli 34, 20133 MILANO
Professional service for enhancing the didactic and tutoring of students, assistance to exams

Since A.A. 2015-16, within the Course of Earth Sciences and Nutrition Sciences, teaching assignment for the Laboratory of Food education and Earth Science – part of Earth Sciences. Università Cattolica del Sacro Cuore di Milano, teaching assignment of 50 hours A.A. 2014-2015.

The same, 48 hours A.A. 2015-2016

The same, 48 hours A.A. 2016-2017

The same, 48 hours A.A. 2017-2018

The same, 48 hours A.A. 2018-2019

The same, 48 hours A.A. 2019-2020

The same, 48 hours A.A. 2020-2021

The same, 48 hours A.A. 2021-2022.

5. RESEARCH ACTIVITY

My research activity has been principally developed within the fields of Geomorphology, Climatology and Forest Ecology, with particular attention to the responses of high-altitude environments to the climatic inputs and with the aim to analyze past influence and future scenarios of climate change on climatically extreme areas that are the first responding to ongoing climatic trends. I have started the research activity analyzing high-altitude environment responses to climate change, focusing on the temporal reconstruction of past climate-related geomorphological events and on the role of geomorphological constraints and human impacts in influencing spatio-temporal dynamics of high-altitude forests. Moreover, I have deepened the analysis of climatic signal in tree-ring chronologies in relation to substrate characteristics and to environmental factors like air pollution. The analysis of growth anomalies in tree rings has been used to support the dating of climate-related geomorphological events, with particular attention given to geomorphological processes that can be considered as hazards in tourist environments. Detailed studies have been performed in glacial and periglacial environments where growth anomalies in conifers can be used as proxies of past and recent glacier dynamics. Moreover, studies have been performed on the tree recolonization patterns of glacier forefields, being an indicator of the geomorphological processes responses to climatic and environmental factors. Particular attention has been given to debris-covered glaciers, where the debris layer let trees colonize the glacier tongue, becoming a useful tool for reconstructing past glacier dynamics.

I have been deepening the tree-ring stable isotope techniques for studying environmental, climatic and hydrological changes over time, especially focusing on the Alpine environment.

The overall applications are about the reconstructions of geomorphological dynamics of high-altitude environments (glacier dynamics, surface and slope movements), dating past

geomorphological events, spatio-temporal dynamics of climate indicators (treeline), climatic signal in tree-ring chronologies over times, with particular attention to the influence to climate sensitivity given by different substrates or by other environmental factors (like air pollution), glacier meltwater distribution in proglacial areas.

6. EDITORIAL ACTIVITY

Since September 2022 I serve as Academic Editor for the scientific journal *Forests*, section board for 'Forest Meteorology and Climate Change'.

Recently, I have been serving as a reviewer for the following journals: *Agricultural and Forest Meteorology*, *Boreas*, *CATENA*, *Dendrochronologia*, *Environmental and Sustainability Indicators*, *Frontiers in Plant Science*, *Plants*, *Science of the Total Environment*.

7. RESEARCH PROJECTS AND FUND RISING

I have contributed to the development of National Research Project proposed to the Italian Ministry of Instruction and of international projects (FP7) proposed to European Institutes for the realization of multidisciplinary research studies on the assessment of high-mountain environment responses to climate change, on the assessment of the geomorphological hazards and risk, and on the climate indicators in the field of geomorphology, glaciology and dendrochronology.

- Work experience at Laboratory of Dendrogeomorphology of Department of Earth Sciences, University of Milan, developing a research project for organizing meteorological series from several alpine stations, quality control and dendroclimatic analysis on tree-ring chronologies from the Central Italian Alps (September-October 2004).

I have participated to the following Projects (FIRST 60%), funded by the Ministry of Instruction:

- MIUR-COFIN 2004 – project: The geomorphological heritage as a resource for a sustainable tourism; National Coordinator Prof. M. Panizza, local Chief Researcher, Prof. M. Pelfini.
- MIUR-COFIN 2005 project: Increasing rate of Climate Change impacts on high mountain areas: cryosphere shrinkage and environmental effects (National and Local Coordinator, Prof. C. Smiraglia).
- MIUR-PRIN 2008 project “Climate change effects on glaciers, permafrost and derived water resource. Quantification of the ongoing variations in the Italian Alps, analysis of their impacts and modelling future projections.
- PRIN 2010-11 "Response of morphoclimatic system dynamics to global changes and related geomorphological hazards".
- Professional consultancy for the project ITALY-CHILE “Plan de Acción para la Conservación de Glaciares ante el Cambio Climático” EvK2-CNR and DGA (Dirección General de Aguas appartenente al Ministerio de Obras Públicas del Governo Cileno) (August 2012)
- Professional consultancy for the EU-Alpine Space "SHARE" project (September 2010 - May 2012).
- Professional consultancy for the EU-INTERREG “PHENOALP” project (April 2010 - March 2012).
- "Ricostruzione dei fenomeni dinamici legati ai ghiacciai alpini per un turismo consapevole e partecipativo in alta montagna" - CAI Club Alpino Italiano, Università di Milano, role of researcher: 12 months since end of 2011.
- "Raccolta partecipata di dati di terreno per la ricerca sugli effetti dei cambiamenti climatici in ambiente alpino e per la divulgazione scientifica" - CAI Club Alpino Italiano, Università di Milano, role of researcher: 12 months since end of 2012.
- "Vedi il cambiamento: come il clima recente ha portato dal ritiro glaciale agli stress di crescita in foresta" - CAI Club Alpino Italiano, Università di Milano, role of researcher: 12 months since end of 2013.
- In 2017 while attending the postdoc at Università di Milano-Bioccca I have won an internal competitive selection, on the basis of a MSCA-Horizon2020 positively evaluated by anonymous peer reviews, for financing the research on dendro-isotopic topics and for the climate reconstruction at the century scale (total amount, 25.000 €).

6. POST-MASTER SPECIALIZATION COURSES

- I have attended the course "Visual Tree Assessment (V.T.A.)" at the Scuola Agraria del Parco di Monza (one week, October 2005).
- I have attended the Summer School "Mountain ecology and alpine ecosystem management" organized by NFZ.Forestnet (France-Germany- Switzerland), Davos (Switzerland) (September 2006).
- I have attended the course "ArcGIS 9.2: Advanced Course" at the Laboratorio di Ingegneria dei Sistemi Territoriali e Ambientali, University of Pisa (Pisa) (June 2008).
- I have attended the course "Ozone symptoms in vegetation: methods, evaluation and validation" at the Istituto Agrario di San Michele all'Adige (Trento) (August 2008).
- I have attended the Winter School "Wood anatomy of tree rings", organized by the Swiss Federal Institute for Forest, Snow and Landscape Research, WSL (Birmensdorf, Zurich) (November 2008).
- I have attended the course "Innovation management" organized by Progetto Formazione (Aosta) (February-April 2009).
- I have attended the course "RIRE: Research in the Network" organized by Progetto Formazione (Aosta) (March 2012).
- I have obtained the possibility to teach in the Italian school system by attending at the Università Cattolica di Milano the following courses for a total of 24 CFU credits (June 2018-June 2020):
 - Storia della scuola
 - Psicologia dei processi di apprendimento
 - Didattica e tecnologie dell'istruzione
 - Pedagogia special e didattica inclusive
 - Ricerca educative e valutazione nell'insegnamento

7. SCIENTIFIC VISITS AND PERIODS ABROAD

I have developed a research activity at UQAT (University of Quebec, Canada), on projects of dendroclimatic analysis (6 months in 2004; 1 month in 2006) and wood anatomy (2006). The collaboration with UQAT has let me deepen the dendrochronological analysis, especially for what concern the influence of substrate in modulating tree sensitivity to climate.

At the Forestry Laboratory of UQAT I have also learned the techniques for preparing and preserving thin microtome slice of wood. These techniques have been very important for species determination of unknown subfossil-wood remains in the Alps.

For several weeks during my doctoral studies and for the research project at ARPA Valle d'Aosta I have met several Researchers at WSL and University of Zurich, constantly developing and updating my research activities. During these visits, I could deepen the use of software for statistical and dendrochronological analysis, I could extend the topics on the relationships between geomorphological processes and tree rings, I could prepare wood samples for anatomical analysis, I could attend to lectures on environmental dynamics, stable isotopes, climate change and tree rings, discussing several aspects of climate change impacts on the mountain environment.

8. TECHNICAL SKILLS

- Analysis of erosion and deposition landforms in the Alpine and Apennines environment, photointerpretation in GIS environment, georeferencing, production of thematic maps, use of the GPS.
- Analysis of glacier dynamics, study of slope superficial movements, dating of past geomorphological events.
- Management and analysis of glaciological, meteorological and dendrochronological time series, detection of high and low frequency signals in high mountain climate.
- Dendrochronological and lichenometric analysis.
- Preparation and analysis of reference chronologies from living trees and dead wood.
- Preparation of samples for wood anatomy and species determination, use of microscopes and

stereoscopes.

- Determination of surface minimum ages by collection of vegetation remains from bogs (peat bog, subfossil wood, etc.) for ¹⁴C dating; interpretation of absolute dating.
- Publication in international scientific journals, in conference proceedings.
- Planning and development of research projects.
- Good level of the English (S-W) and sufficient of French (S)

- European Language Passport

Self-assessment	Understanding				Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production			
English	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
French	B1	Independent user	B2	Independent user	B1	Independent user	B1	Independent user	B1	Independent user

(*) *Common European Framework of Reference for Languages*

- Use of the following software:
 - O.S.: Windows.
 - Generic and communication Software: Microsoft Office (Word, Excel, PowerPoint), Open Office, CorelDraw, Adobe Acrobat, Adobe Photoshop, Internet e mail browser.
 - Specific Software: ArcGIS, ArcMap, QGIS, SPSS, TSAP-Win, Windendro, Dendroclim2002, Cofecha, Arstan, DPL, Canoco.

10. SCIENTIFIC COMMUNICATIONS

I have attended several congresses and conferences. In particular, I have been speaker at the following national and international meetings:

- 10th Alpine Glaciology Meeting 2006. Munich, Germany, 23-24 February 2006: Leonelli, G., Pelfini, M., 2006. Glacier mass balances and tree growth in the Central Alps: first results from Val Trafoi (Italy, BZ).
- Careser 40 - Quarant'anni di bilancio di massa del Ghiacciaio del Careser - Val di Peio, Trentino. Peio, 30 June - 1 July 2007: Leonelli, G., Pelfini, M., 2007. Sensibilità climatica delle conifere d'alta quota e correlazione con i bilanci di massa di alcuni ghiacciai del Gruppo Ortles-Cevedale.
- 14th Alpine Glaciology Meeting, AGM. Milano, 25-26 March 2010: Leonelli, G., Pelfini, M. Post Little Ice Age climate change impacts on hydrological and glacio-geomorphological processes in high-mountain environments derived from proxy-based reconstructions: the project.
- IV Giornata Nazionale dei Giovani Geomorfologi – Como, 28–30 Settembre 2011. AlGeo, Università degli Studi dell'Insubria: Leonelli, G., Coppola, A. Il segnale climatico in due network dendroclimatici di alta quota nelle Alpi Centrali: possibilità per una ricostruzione a scala secolare delle temperature estive.
- 8th International conference (AIG) on Geomorphology. Parigi, 27-31 Agosto 2013: Leonelli G., Pelfini M. 2013. $\delta^{18}\text{O}$ isotopic signature of glacier meltwaters in the tree rings: basis for long-term high-resolution hydrological reconstructions in glacial environments.
- V Giornata nazionale dei giovani geomorfologi - Roma, 1 Ottobre 2013: Leonelli G. L'influenza dei fattori geomorfologici sul $\delta^{13}\text{C}$ negli anelli di accrescimento degli alberi: uno strumento per ricostruire dinamiche climatico-ambientali nelle Alpi.
- Congresso FIST "GEOITALIA 2013 – IX Forum di Scienze della Terra" (Pisa 16-18 September 2013), Session ENVIRONMENT-GEOCHEMISTRY - F3. Stable and radiogenic isotopes in environmental studies: Leonelli G., 2013. Stable isotopes in the tree rings: a tool for

characterizing geomorphologic and hydrologic changes in glacial environments.

- SGI-SIMP 2014 The Future of the Italian Geosciences - The Italian Geosciences of the Future - Milan, Italy, September 10-12, 2014. Leonelli G., Coppola A., Baroni C., Salvatore M.C., Pelfini M. 2014. An innovative approach to high-resolution summer-temperature reconstructions for the last centuries using large tree-ring datasets from the Central Alps.
- CGI 2014 The Future of the Glaciers - From the past to the next 100 years. Pelfini M., Bonetti A., Masseroli A., Leonelli G. (2014). Glacier fluctuations and forest limits changes in the central Italian Alps.
- Leonelli G., Pelfini M. (2015), Tree-ring stable isotopes for reconstructing glacio-hydrological changes in glacier forefields: the study case of the Forni Glacier, Italian Alps. 19th Alpine Glaciology Meeting, Milano 7-8 Maggio 2015.
- Leonelli G., Coppola A., Pelfini M., Baroni C., Salvatore M.C., Maggi V. (2015). Verso l'obiettivo Italy 2k - I dati dendrocronologici dei Gruppi di ricerca ed Enti italiani; potenzialità e sfide per la ricostruzione del clima. Workshop NextData. Milano 04/03/2015.
- Leonelli G., Maggi V., Maugeri M., Pelfini M., Coppola A., Salvatore M.C., Baroni C., Brunetti M. (2016). Ricostruzioni dendroclimatiche su Alpi e Appennino. Workshop NextData. Milano 05/02/2016.
- Anna Masseroli, Giovanni Leonelli, Eric P. Verrecchia, David Sebag, Emanuele D. Pozzi, Manuela Pelfini, Valter Maggi, Luca Trombino (2017). Soils evolution and treeline fluctuations under late Holocene climatic changes: an integrated approach from Valle d'Aosta (Western European Alps, Italy). Geophysical Research Abstracts Vol. 19, EGU2017-870.
- Giovanni Leonelli, Valter Maggi (2018). Late summer temperature (and precipitation) reconstruction from a tree-ring network in the Italian Peninsula. Geophysical Research Abstracts, Vol. 20, EGU2018-8743.
- Giovanni Leonelli, Valter Maggi (2018). Tree-ring $\delta^{18}\text{O}$ dependence on water source isotopic signature in glacial environments of the European Alps: disentangling precipitation and glacier meltwater signals. Geophysical Research Abstracts, Vol. 20, EGU2018-8981.
- Valter Maggi, Giovanni Leonelli, Francesca Vallé, Roberta Pini, Cesare Ravazzi (2018). Evaluating inner variability and common patterns of tree rings and pollen records in northern Italy: potentials for an integrated multi-proxy climate reconstruction. Geophysical Research Abstracts, Vol. 20, EGU2018-8602.
- Leonelli Giovanni, 2018. Tree-ring stable isotopes for reconstructing climatic and environmental changes through time: a study on air pollution changes and potential applications in the quality assessment of agroecosystems. Evolving Agriculture and Food, Opening up Biodynamic Research, September 5th to 8th 2018 / Dornach, Switzerland, p. 49.
- Leonelli G., Pelfini M. & Maggi V. - Changes in the tree-ring $\delta^{18}\text{O}$ from the Forni Glacier forefield due to glacier stream water inputs and climate change: potential use for environmental and climatic reconstructions. Congresso della Società Geologica Italiana, Parma, 16-19 Settembre 2021. p. 370, <https://doi.org/10.3301/ABSGI.2019.05>
- Leonelli G., Celico F., Petrella E., Francese R. & Chelli A. - Integrating GIS and tree-ring techniques for characterizing surface movements of landslides in the Northern Apennines: challenges, strengths and limitations at the Carobbio study site. Congresso della Società Geologica Italiana, Parma, 16-19 September 2019. p. 619, <https://doi.org/10.3301/ABSGI.2019.05>
- Giacomelli, S.; Sgavetti, M.; Bertoni, D.; Rossi, V.; Lammoglia, T.; Leonelli, G.; Chelli, A. - Integrated use of geomorphological and open-access remote sensing data: examples from different case studies. Congresso della Società Geologica Italiana, Parma, 16-19 September 2019. p. 615, <https://doi.org/10.3301/ABSGI.2019.05>
- Gemignani C.A., Giacomelli S., Leonelli G. & Chelli A. - Historical maps as source of information on temporal distribution of landslide events in the Northern Apennines. Congresso della Società Geologica Italiana, Parma, 16-19 September 2019. p. 612, <https://doi.org/10.3301/ABSGI.2019.05>
- Chelli A., Leonelli G., 2021. Dating landslide movements at the Carobbio study site, Northern Apennines. DOI:10.3301/ABSGI.2021.03. pp.241-241. In Geology without borders- Abstract Books del 90 Congresso della Società Geologica Italiana, Trieste,14-16 September 2021.
- Leonelli G., Chelli A., 2021. Evolution of the forested landslide slope along the Parma Torrent: first results of an integrated approach. DOI:10.3301/ABSGI.2021.03. pp.326-326. In Geology without borders - Abstract Books of 90th Congresso della Società Geologica Italiana, Trieste,14-16 September 2021.

11. PUBLICATION LIST

- [1] Pelfini, M., Leonelli, G., Santilli, M. (2006). Climatic and environmental influences on mountain pine (*Pinus montana* Miller) growth in the Central Italian Alps. *Arctic, Antarctic, and Alpine Research* 38(4): 614-623; ISSN 1523-0430; - ISSN 1938-4246.
- [2] Pelfini, M., Santilli, M., Leonelli, G., Bozzoni, M. (2007). Investigating surface movements of debris-covered Miage Glacier (Western Italian Alps) using dendroglaciological analysis. *Journal of Glaciology* 53 (180): 141-152; ISSN 0022-1430. - ISSN 1727-5652.
- [3] Zanzi, A., Pelfini, M., Muttoni, G., Santilli, M., Leonelli, G. (2007). Spectral analysis on mountain pine tree-ring chronologies. *Dendrochronologia* 24(2-3): 145-154; ISSN 1125-7865. - ISSN 1612-0051.
- [4] Leonelli, G., Pelfini, M. (2008). Influence of climate and climate anomalies on Norway spruce tree-ring growth at different altitude and on glacier responses: examples from the Central Italian Alps. *Geografiska Annaler* 90 A(1): 75-86; ISSN 0435-3676. - ISSN 1468-0459.
- [5] Leonelli, G., Pelfini, M., Cherubini, P. (2008). Exploring the potential of tree-ring chronologies from the Trafoi Valley (Central Italian Alps) to reconstruct glacier mass balance. *Boreas* 37(1): 169-178; ISSN 0300-9483. - ISSN 1502-3885.
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