

## **Curriculum Vitae LORENZO PICCO**

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**Date of birth:** 15/02/1980

**Nationality:** Italian

**Gender:** male



### **Brief introduction of myself:**

The nature of my Ph.D. in Environmental Hydrology and my academic career has prepared me in many different aspects of riverine environments. In the past eight years, I was committed to extensive field surveying and post processing data regarding riverine environments affected by both human pressure and natural hazards, such as floods, forest fires or volcanic eruptions.

I am fast and accurate in data analysis and writing reports, as you can see in the last 8 years I had the opportunity to contribute in the drafting of more than 46 papers published in international peer reviewed journals. Overall, I really enjoy the opportunity to work outdoor, in the field, as major component of my job, using technical equipment such as GPS devices, terrestrial laser scanner and hydrological instrumentation in which I am proficient.

I am a good communicator and teammate; I am able to manage and coordinate teams or be an active part of these. I am proficient in work under pressure and I am able to organize and manage field works, analysis and reporting depending on the deadlines.

## **Personal skills and competences**

**Mother tongue:** Italian

**Other languages:**

English:

- Understanding level: *very good (C1)*
- Reading level: *very good (C1)*
- Writing level: *good (B2-C1)*
- Speaking level: *good (B2-C1)*

Spanish:

- Understanding level: *very good (C2)*
- Reading level: *very good (C2)*
- Writing level: *very good (B2-C1)*
- Speaking level: *very good (C1)*

**Computer skills and competences:**

- GIS Software: ArcView, ArcGis, Whitebox
- Data analysis software : Fusion, Terrascan, Leica Cyclone, Cloud Cube
- Hydraulic/Hydrologic modellation: Hec-Ras, Hec-Hms, Basement, Flo2D
- Programming: C++ (basic), MatLab (basic)
- Statistical Analysis : Statistica, R (basic)

**Topographical instrumentation:**

- Total Station
- Differential Global Positioning System (DGPS)
- Terrestrial Laser Scanner (TLS)

**Personal Interests:**

- Sports (Hiking, Climbing, Running, Swimming, Skiing, Surfing, Basketball)
- Travelling
- Arts (photographs, paint, music)

## **RESEARCH INTERESTS**

- Geomorphology
- Morphological change
- High resolution topography
- Terrestrial Laser Scanner (TLS)
- Airborne LiDAR technology
- Aerial photogrammetry
- High resolution digital models (DEM, DTM, DSM, CHM, DoD)
- GIS analysis
- Fluvial geomorphology
- Sediment Transport
- Sediment Management
- Large Wood dynamics and characteristics
- Fluvial Island dynamics and characteristics
- Riparian vegetation
- Gravel bed rivers
- River restoration
- Mountain and piedmont streams and basins
- Debris flow
- Human impact
- Natural hazards
- Risk management
- Green energy production

## **Education, Research and Employment**

**02/05/2016 (Ongoing): Assistant Professor** at the Department of Land, Environment, Agriculture and Forestry; University of Padova; Chair in “Mountain River Morphology and Restoration”.

**01/11/2013 - 01/05/2016, Assistant-researcher:** involved in the Project ‘*SedAlp: sediment management in Alpine basins, integrating sediment continuum, risk mitigation and hydropower*’, 83-4-3-AT, in the framework of the European Territorial Cooperation Program ‘Alpine Space’ 2007-2013, as ‘Co-Work Package Leader’, at the Department of Land, Environment, Agriculture and Forestry; University of Padova;

**01/05/2012 –31/10/2013, Assistant-researcher:** involved in the Strategic Research Project PRST08001 “*GEORISKS, Geological, morphological and hydrological processes: monitoring, modelling and impact in the North-Eastern Italy*”, research Unit STPD08RWBY-004, at Department of Land, Environment, Agriculture and Forestry; University of Padova;

**1/05/2010 – 30/04/2012, Assistant-researcher:** involved in the Excellence Research Programme “*Linking geomorphological processes & vegetation dynamics in Gravel Bed Rivers*”, funded by the CARIPARO Foundation. Scientific Manager: Prof Mario A. Lenzi, at Department of Land, Environment, Agriculture and Forestry; University of Padova;

**1/02/2010 – 30/04/2010, scholarship** into the Excellence Research Project “*Linking geomorphological processes & vegetation dynamics in Gravel Bed Rivers*”, funded by CARIPARO Foundation. Scientific Manager: Prof Mario A. Lenzi, at Department of Land, Environment, Agriculture and Forestry; University of Padova;

**30/03/2010, PhD in Environmental Hydrology** (January 2007 – December 2009), at the Department of Land and Agroforest Environment of the University of Padova. Thesis on “*Long period morphological dynamics in regulated braided gravel-bed rivers: comparison between Piave River (Italy) and Waitaki River (New Zealand)*”, advised by Prof. Mario A. Lenzi of University of Padova (Italy), Dr. Ing. Murray D. Hicks, National Institute for Water and Atmospheric Research Ltd. (NIWA) of Christchurch (New Zealand), and Prof. Dr. Francesco Comiti, Free University of Bozen (Italy);

**16/09/2006, M.Sc. degree in Forestry and Environmental Sciences** at the University of Padova. Thesis on “*Characteristics and movement of Large Woody Debris (LWD) in two basins of Chile Andes*”, advised by Prof. Mario A. Lenzi of University of Padova (Italy), Prof. Dr. Andrea Andreoli, University of Concepcion (Chile) and Prof. Dr. Andrès Iroume of Universidad Austral de Chile (Chile).

## Training courses

*“Modeling River Flow, Sediment Transport and Morphodynamics”*. Post Conference Short Course, after GBR8 workshop, to Hodaka Sedimentation Observatory, Disaster Prevention Research Institute, Kyoto University, 19/09/2015 (6 hours);

*“Introduction to Geomorphic Change Detection”*. Post Conference Short Course, after GBR8 workshop, to Hodaka Sedimentation Observatory, Disaster Prevention Research Institute, Kyoto University, 19/09/2015 (6 hours);

*“Geostatistical techniques for spatial interpolation”*. To “Interdepartmental Research Center for Cartography, Photogrammetry, Remote Sensing and GIS”, University of Padua, 19-20-21/05/2008 (24 Hours);

*“Analysis and elaboration of Laser Scanner data (LiDAR)”*. To “Interdepartmental Research Center for Cartography, Photogrammetry, Remote Sensing and GIS”, University of Padua, 23-24-25/06/2008 (24 hours);

*“Hydraulic modellation using Hec-Ras”*. To Land, Environment, Agriculture and Forestry (L.E.A.F.) Department, University of Padua, in collaboration with Beta Studio s.r.l., 30/06/2008, 1-2/07/2008 (24 hours);

*“Utilization and acquisition of data using Terrestrial Laser Scanner (TLS)”*, to Land, Environment, Agriculture and Forestry (L.E.A.F.) Department, University of Padua, 25-26-27/05/2010 (30 hours), by Leica Geosystems;

*“Elaboration and utilization of Terrestrial Laser Scanner (TLS) data”* to Land, Environment, Agriculture and Forestry (L.E.A.F.) Department, University of Padua, 26-27-28/10/2010 (20 hours), by Leica Geosystems;

*“Introduction to MATLAB”*. To “Interdepartmental Research Center for Cartography, Photogrammetry, Remote Sensing and GIS”, University of Padua, 24, 25/01/2011 - 7, 21/02/2011 (24 hours).

## **Didactic activity**

Lecturer to the M.Sc. course “*Mountain River Morphology and Restoration*”, during the academic year 2018/19, 48 hours (in English);

Lecturer to the course “*River Geomorphology and Monitoring Systems*” at Universidad Austral de Chile, during the academic year 2017/18, 9 hours (In Spanish)

Lecturer to the M.Sc. course “*Mountain Fluvial Morphology and Stream Restoration*”, during the academic year 2016/17; 2017/18, 64 hours (in English);

Assistent Lecturer to the M.Sc. course “*Fluvial morphology and fluvial requalification*”, with Prof. Mario A. Lenzi, University of Padova (Italy), during the academic years 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/2012, 2012/2013, 2014/2015, 2014/2015, 2015/2016, 2016/17, 2017/18, 2018/19 (in Italian);

Assistent Lecturer to the M.Sc. course “*Mountain Fluvial Morphology and Stream Restoration*” into the program SUFONAMA (European Erasmus Mundus MSc), with Prof. Mario A. Lenzi, University of Padova (Italy), during the academic years 2009/10, 2010/11, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016 (in English);

Assistent Lecturer to the B.Sc. course “*Rural landscape conservation and watershed management*”, with Prof. Mario A. Lenzi, University of Padova (Italy), during the academic years 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/2012, 2012/2013, 2014/2015, 2014/2015, 2015/2016, 2016/17, 2017/18, 2018/19 (in Italian);

Lecturer to the MASTER in “*Analysis, Evaluation and Mitigation of Hydrologic Risk*”, University of Udine (Italy), during the academic years 2009/10 and 2010/2011 (in Italian).

## **Editorial activities**

**Editorial committee:** “Proceedings of the Third International Conference Wood in World Rivers 2015”, Cleup, ISBN 978 88 6787 448 4;

**Guest Editor Special Issue:** Geomorphology (2015 - 2016), “Dynamics and ecology of wood in rivers”;

### **Reviewer for:**

- Geomorphology;
- Earth-Science Reviews;
- Earth Surface Processes and Landforms;
- Journal of Hydrology;
- Hydrological Processes;
- Catena;
- Geografiska Annaler: Series A, Physical Geography;
- Hydrology Research;
- Science of the Total Environment;
- Geomatics, Natural Hazards and Risk;
- Journal of Environmental Management;
- Journal of Mountain Science;
- Remote Sensing;
- Water Resources Research;
- Land Degradation and Development;
- River Research and Applications;
- Science of the Total Environment;
- Sensors;
- Journal of Hydraulic Engineering;
- Frontiers;
- Water;
- Forest Ecology and Management;
- Journal of Applied Water Engineering and Research;
- Freshwater Biology.



## **Other Activities:**

**Steering Committee:** International Conference “Third International Conference Wood in World Rivers 2015”, Padova, 2015;

**Organizing committee:** International Conference “Third International Conference Wood in World Rivers 2015”, Padova, 2015;

**Scientific committee:** International Conference “Third International Conference Wood in World Rivers 2015”, Padova, 2015.

**Scientific committee:** International Conference “Fourth International Conference Wood in World Rivers 2019”, Valdivia (Chile), 2019.

**Steering committee:** International Conference “Fifth International Conference Wood in World Rivers 2023”, Tadousac (Quebec), 2023;

**Organizing committee:** International Conference “Fifth International Conference Wood in World Rivers 2023”, Tadousac (Quebec), 2023;

**Scientific committee:** International Conference “Fifth International Conference Wood in World Rivers 2023”, Tadousac (Quebec), 2023.

## **Convener**

ISRS 2019, “Educated future: teaching about rivers and its implications for sustainable river management”;

EGU General Assembly (2017), “Vegetated rivers: relationships between riparian vegetation, instream wood and fluvial processes, hazards and management”;

EGU General Assembly (2016), “Measuring, monitoring and modeling the link between Large Wood and riverine environments”.

## **Foreign Study and Research Experience**

1/06/2019 – 8/06/2019: visiting scholar to the Pedagogical University of Cracow (Poland), with Prof. Joanna Zawiejska, funded by University of Padova.

14/12/2018 – 4/02/2019: visiting scholar to the *Universidad Austral de Chile* (Valdivia) Prof. Andrés Iroumé, funded by FONDECYT Chile.

05/03/2018 – 28/03/2018: visiting scholar to the *Universidad Austral de Chile* (Valdivia) Prof. Andrés Iroumé, and Prof. Bruno Mazzorana, into the RiNA Research Network, funded by FONDECYT Chile and within the Chile\_Italy Project CONICYT-ITAL17004.

24/02/2018 – 30/03/2018: visiting scholar to the *Massey University* (New Zealand), with Prof. Ian Fuller, funded by Massey University.

19/08/2017 – 01/09/2017: visiting professor to the *Universite du Quebec* at Rimouski and *Universite du Quebec* at Chicoutimi, with Prof. Maxime Boivin and Prof. Thomas Buffin-Belanger, funded by University of Padova, Italy.

13/03/2017 – 31/03/2017: visiting researcher at the *Universidad Austral de Chile* (Valdivia) with Prof. Dr. G. Valdebenito, into the RiNA Research Network, funded by FONDECYT Chile;

01/03/2016 – 31/03/2016: visiting research at the *Universidad Austral de Chile* (Valdivia) with Prof. Dr. A. Iroumé and Prof. Dr. G. Valdebenito, funded by FONDECYT Chile;

14/03/2015 - 11/04/2015: visiting research period and field activities to the *Universidad Austral de Chile* (Valdivia) with Prof. Dr. A. Iroumé, funded by FONDECYT Chile;

03/01/2014 – 31/01/2014: visiting research period and field activities at the *Universidad Austral de Chile* (Valdivia) with Prof. Dr. A. Iroumé, funded by FONDECYT Chile;

14/03/2013 – 26/05/2013: visiting research period and field activities at the *Universidad Austral de Chile* (Valdivia) with Prof. Dr. A. Iroumé funded by FONDECYT Chile, and to *Pontificia Universidad Catolica de Chile* (Santiago) with Prof. Dr. L. Mao;

7/01/2012 – 28/01/2012: visiting research period and field activities at the *University of Concepcion* (Chile) with Prof. Dr. A. Andreoli, funded by FONDECYT Chile;

20/10/2008 - 27/06/2009: visiting research period and field activities to the *National Institute for Water and Atmospheric Research Ltd.* (NIWA) of Christchurch in New Zealand with Dr. Ing. M.D. Hicks, funded by University of Padova;

01/10/2005 – 5/02/2006: visiting research period and field activities to Trés Arroyos basin and Rio Toro basin (Chile), for M.Sc. thesis, into the International project “*EPIC FORCE Evidence-based Policy for Integrated Control of Forested River Catchments in Extreme Rainfall and Snowmelt*”;

04/02/2005 – 30/07/2005: study exchange Erasmus-Socrates, to the “*Universidad Politecnica de Valencia*” (Spain).

## Grants

### 2016

Project: “Relationship between sediment transport, riparian vegetation and Large Wood along a gravel bed river: the Piave River study case (North-East Italy)”. Supported by Department of Land, Environment, Agriculture and Forestry, University of Padova. Ammount: 5976.00 €.

Project: “Sediment transfer processes in an Alpine basin: sediment cascades from hillslopes to the channel network”. Supported by Department of Land, Environment, Agriculture and Forestry, University of Padova. Ammount: 34926.00 €.

Project: “Dynamics of the riparian buffer zone”. Supported by University of Padova. Ammount: 2000.00 €.

### 2017

Project: “Source areas and channel networks. Increasing the knowledge on sediment connectivity around alpine basins”. Supported by Department of Land, Environment, Agriculture and Forestry, University of Padova. Ammount: 5112.00 €.

### 2018

Project: “Natural and Anthropic forces acting on gravel bed rivers”. Supported by Department of Land, Environment, Agriculture and Forestry, University of Padova. Ammount: 5988.00 €.

### 2019

Project: “Natural and Anthropic forces acting on gravel bed rivers”. Supported by Department of Land, Environment, Agriculture and Forestry, University of Padova. Ammount: 5988.00 €.

## Other most important research projects

**2018-2020**: “Volcanic eruptions vs. human impact: a comparative analysis between natural and artificial morphological changes along gravel bed rivers in Chile and Italy. Learning from different impacts to better manage the affected riverine environments”, CONICYT/ITAL170004, Head of Project: Prof. Mario A. Lenzi and Prof. Andrés Iroumé.

**Role covered**: associate researcher, person in charge of organization and management of the project from the Italian side.

**2015-2016**: “WoodAlp-Linking large wood and morphological dynamics of gravel bed rivers of eastearn Italian Alps”, Head of project: Prof. M.A. Lenzi.

**Role covered**: person in charge of organization and management of field activities, data analysis and presentation for Work Packages 1, 2 and 3;

**2013-2015:** PRIN2010-11-prot. 20104ALME4-ITSE-“National network for monitoring, modelling and sustainable management of erosion processes in agricultural land and hilly-mountainous area”. Scientific National Coordinator: Prof. Mario A. Lenzi.

**Role covered:** person in charge of organization and management of field activities, data analysis and presentation for WP-A1- Field surveys at basin scale and analysis; WP-A2- Field surveys at channel reach scale and analysis, of Research Unit N. 1- Department Tesaf-UNIPD;

**2012-2015:** FP7-INTERREG-European Territorial Cooperation ALPINE SPACE- Project Eol: 83-4-3-AT-SEDALP. “Sediment management in Alpine basins: integrating sediment continuum, risk mitigation and hydropower”; Project Partner PP3-UNIPD-TeSAF Department.

**Role covered:** person in charge of organization and management of field activities, data analysis and presentation for WP7- Sediment Management (including Large Wood); WP5 – sediment transport; WP6 – interaction with structures.

**2009-2013:** Strategic project GEORISKS: Geological, hydrological and morphological processes: monitoring, modelling and impact in the northeastern Italy.

**Role covered:** person in charge of organization and management of field activities, data analysis and presentation for WP3 – “Analysis of the dynamics of sediment, in-channel wood and riparian vegetation in gravel bed rivers”, carried out along the Piave e Tagliamento rivers;

**2009-2011:** Excellence research Project CARIPARO-UNIVERSITA’ DI PADOVA, “Linking geomorphological processes and vegetation dynamics in gravel bed rivers”;

**Role covered:** person in charge of organization and management of field activities, data analysis and presentation for WP2 Hydraulic and Hydrology, and for WP6 Sediment and Large Wood Management;

**2008-2009:** “SUSTAINABLE HYDRO-ELECTRICITY (SHE) WITH ENPHASIS ON SEDIMENT MANAGEMENT AND DESIGN FLOODS”, with University of Concepcion (Chile), University of Newcastle (UK), Southampton (UK) and Exeter(UK); University of Idaho (USA); Polish Accademy of Sciences (Poland).

**Role covered:** person in charge of organization of field activities and data analysis;

**2006-2009:** (Specific Measures of International Cooperation)-INCO-CT2004-510739-EPIC FORCE- “Evidence-Based Policy for Integrated Control of Forested River Catchments in Extreme Rainfall and Snowmelt”. Scientific coordinator: Prof. James Bathurst, UK.

**Role covered:** person in charge of organization and management of field activities, and management of Technical Guidelines: D22-Review of best practices for dealing with LWD e D12- large wood debris field data and methodology: chilean basins.

## **Scientific publications**

Number of documents: 46; Number of citations: 467; h-index: 13 (Source: Scopus – 19/06/2019)

### **PhD thesis**

**Picco L.**, *Long period morphological dynamics in regulated braided gravel-bed rivers: comparison between Piave River (Italy) and Waitaki River (New Zealand)*, 2010. Supervisor: Prof. M.A. Lenzi; Co-Supervisor: Prof. Dr. F. Comiti; Co-Supervisor: Dr. Ing. M.D. Hicks.

<http://paduaresearch.cab.unipd.it/2778/>

### **M.Sc. Thesis**

**Picco L.**, *Characteristics and movement of Large Woody Debris (LWD) in two basins of Chile Andes*, 2006. Supervisor: Prof. M.A. Lenzi; Co-supervisor: Prof. A. Andreoli.

## **International peer-reviewed journals**

### **In review**

Martini L., **Picco L.**, Iroumé A., Cavalli M., submitted. Sediment connectivity changes in an Andean catchment affected by volcanic eruption. *Science of the Total Environment* (submitted Review 1 June 6th, 2019).

Sanhueza D., **Picco L.**, Ruiz-Villanueva V., Iroumé A., Ulloa H., Barrientos G., in review. Quantification of fluvial wood using UAVs and structure from motion: strengths and potential limitations. *Geomorphology* (submitted March 4<sup>th</sup>, 2019);

Oss Cazzador D., Rainato R., Cavalli M., Lenzi M.A., **Picco L.**, in review. Integrated analysis of sediment source areas in an Alpine basin. *Catena* (submitted June 6th, 2019).

### **Published**

Mazzorana B., **Picco L.**, Rainato R., Iroumé A., Ruiz-villanueva V., Rojas C., Valdebenito G., Iribarren-Anacona P., Melnick D., 2019. Cascading processes in a changing environment: disturbances on fluvial ecosystems in Chile and implications for hazard and risk management. *Science of the Total Environment* 655, 1089-1103. 10.1016/j.scitotenv.2018.11.217.

Rainato R., **Picco L.**, Oss Cazzador D., Mao L., 2018. Bedload transport in a steep alpine stream: Assessment of sediment mobility and virtual velocity using the bedload tracking. *E3S Web of Conferences* 40, 02027 (2018) River Flow 2018, <https://doi.org/10.1051/e3sconf/20184002027>.

Tonon A., **Picco L.**, Rainato R., 2018. Test of methodology for developing a large wood budget: A 1-year example from a regulated gravel bed river following ordinary floods. *Catena* 165, 115-124. <https://doi.org/10.1016/j.catena.2018.01.035>.

Rainato R., **Picco L.**, Cavalli M., Mao L., Neverman A.J., Tarolli P., 2018. Connecting climate conditions, sediment sources and sediment transport in an alpine basin. *Land Degradation and Development* 29(4), 1154-1166, DOI: 10.1002/ldr.2813.

Rainato R., Mao L., **Picco L.**, 2018. Near-bankfull floods in an Alpine stream: effects on the sediment mobility and bedload magnitude. *International Journal of Sediment Research* 33(1), 27-34. Doi: <http://dx.doi.org/10.1016/j.ijsrc.2017.03.006>.

Iroumé A., Ruiz-Villanueva V., **Picco L.**, 2017. Breakdown of instream wood in low order forested streams of the Southern Chilean mountain ranges. *Forest Ecology and Management* 401, 17-32. <http://dx.doi.org/10.1016/j.foreco.2017.06.058>.

Tonon A., Iroumé A., **Picco L.**, Oss-Cazzador D., Lenzi M.A., 2017. Temporal variations of large wood abundance and mobility in the Blanco River affected by the Chaitén volcanic eruption, southern Chile. *Catena* 156, 149-160. <http://dx.doi.org/10.1016/j.catena.2017.03.025>.

Rainato R., Mao L., Garcia-Rama A., **Picco L.**, Cesca M., Vianello A., Preciso E., Scussel G.R., Lenzi M.A., 2017. Three decades of monitoring in the Rio Cordon instrumented basin: sediment budget and temporal trend of sediment yield. *Geomorphology* 291, 45-56. <http://dx.doi.org/10.1016/j.geomorph.2016.03.012>.

**Picco L.**, Comiti F., Mao L., Tonon A., Lenzi M.A., 2017. Medium and short term riparian vegetation, island and channel evolution in response to human pressure in a regulated gravel bed river (Piave River, Italy). *Catena* 149, 760-769. <http://dx.doi.org/10.1016/j.catena.2016.04.005>.

**Picco L.**, Bertoldi W., Comiti F., 2017. Dynamics and ecology of wood in world rivers. *Geomorphology* 279, 1-2. <http://dx.doi.org/10.1016/j.geomorph.2016.11.20>.

Mao L., **Picco L.**, Lenzi M.A., Surian N., 2017. Bed material transport estimate in large gravel-bed rivers using the virtual velocity approach. *Earth Surface Processes and Landforms* 42, 595-611. DOI: 10.1002/esp.4000.

**Picco L.**, Sitzia T., Mao L., Comiti F. and Lenzi M.A., 2016. Linking riparian forest structure and fluvio-morphological characteristics in a gravel-bed river (Piave river-Italian alps). *Ecohydrology* 9, 101-112. DOI: 10.1002/eco.1616.

**Picco L.**, Oss-Cazzador D., Rainato R., 2016. Localized geomorphic effects attributable to the presence of in-channel wood along two Italian gravel-bed rivers: preliminary results. In:

*River Flow 2016 – Constantinescu, Garcia & Hanes (Eds), Taylor and Francis Group, London, ISBN 978-1-138-02913-2, 2315-2319.*

Ulloa H., Iroumé A., **Picco L.**, Mohr C.H., Mazzorana B., Lenzi M.A., Mao L., 2016. Spatial analysis of the impacts of the Chaitén volcano eruption (Chile) in three fluvial systems. *Journal of South American Earth Sciences* 69, 213-225. <http://dx.doi.org/10.1016/j.jsames.2016.04.008>.

**Picco L.**, Tonon A., Rainato R., Lenzi M.A., 2016. Bank erosion and large wood recruitment along a gravel bed river. *Journal of Agricultural Engineering*, XLVII: 488, 72-81. DOI: 10.4081/jae.2016.488.

Sitzia T., **Picco L.**, Ravazzolo D., Comiti F., Mao L., Lenzi M.A., 2016. Relationships between woody vegetation and geomorphological patterns in three gravel-bed rivers with different intensities of anthropogenic disturbance. *Advances in Water Resources* 93, 193-204. DOI: 10.1016/j.advwatres.2015.11.016.

Ulloa H., Iroumé A., **Picco L.**, Korup O., Lenzi M.A., L. Mao, Ravazzolo D., 2015. Massive biomass flushing despite modest channel response in the Rayas River following the 2008 eruption of Chaitén volcano, Chile. *Geomorphology* 250, 397-406. DOI:10.1016/j.geomorph.2015.09.019.

**Picco L.**, Tonon A., Ravazzolo D., Rainato R., and Lenzi M.A., 2015. Monitoring river islands dynamics using aerial photographs and LiDAR data: the Tagliamento river study case. *Applied Geomatics*, 7(3), 163-170. DOI: 10.1007/s12518-014-0139-7.

Ravazzolo D., Mao L., **Picco L.**, Sitzia T., Lenzi M.A., 2015. Geomorphic effects of wood quantity and characteristics in three Italian gravel bed rivers. *Geomorphology* 246, 79-89 DOI: 10.1016/j.geomorph.2015.06.012.

Kaless G., Mao L., Moretto J., **Picco L.**, Lenzi M.A., 2015. The response of a gravel-bed river planform configuration to flow variations and bed reworking: a modelling study. *Hydrological Processes* 29, 3812-3828. DOI: 10.1002/hyp.10504.

Ravazzolo D., Mao L., Garniga B., **Picco L.**, Lenzi M.A., 2015. Volume and travel distance of wood pieces in the Tagliamento River (Northeastern Italy). *Engineering Geology for Society and Territory – Volume 3*, pp. 135-138. DOI: 10.1007/978-3-319-09054-2\_26. G.Lollino et al.(eds.). Springer International Publishing Switzerland 2015.

Ulloa H., **Picco L.**, Iroumé A., Mao L., Gallo C., 2015. Analysis of channel morphology and large wood characteristics through remote images in the Blanco river after the eruption on the Chaitén volcano (Southern Chile). *Engineering Geology for Society and Territory – Volume 3*, pp. 365-369. DOI: 10.1007/978-3-319-09054-2\_77. G.Lollino et al. (eds.). Springer International Publishing Switzerland 2015.

Ravazzolo D., Mao L., **Picco L.**, Lenzi M.A., 2015. Tracking log displacement during floods in the Tagliamento River using RFID and GPS tracker devices. *Geomorphology* 228, 226-233. <http://dx.doi.org/10.1016/j.geomorph.2014.09.012>.

**Picco L.**, Ravazzolo D., Rainato R., Lenzi M.A., 2014. Characteristics of fluvial islands along three gravel bed-rivers of North-Eastern Italy. *Cuadernos de Investigación Geográfica* 40, 54-64, ISSN:0211-6820.

**Picco, L.**, Mao, L., Rainato, R. and Lenzi, M.A., 2014. Medium-term fluvial island evolution in a disturbed gravelbed river (Piave River, Northeastern Italian Alps). *Geografiska Annaler: Series A, Physical Geography* 96, 83-97, doi: 10.1111/geoa.12034.

Moretto J., Rigon E., Mao L., Delai F., **Picco L.**, Lenzi M.A., 2014. Short-term geomorphic analysis in a fluvial disturbed environment by fusion of LiDAR, colour bathymetry and DGPSsurvey. *Catena* 122, 180-195. <http://dx.doi.org/10.1016/j.catena.2014.06.023>.

Tonon, A., **Picco L.**, Ravazzolo, D., and Lenzi, M.A., 2014. Using a terrestrial laser scanner to detect wood characteristics in gravel-bed rivers. *Journal of Agricultural Engineering*; volume XLV:431. doi:10.4081/jae.2014.431

Moretto J., Rigon E., Mao L., **Picco L.**, Delai F. and Lenzi M.A., 2014. Channel adjustments and island dynamics in the Brenta River (Italy) over the last 30 years. *River Research and Applications* 30, 719–732. DOI: 10.1002/rra.2676.

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## Oral presentations in international conferences

Subsequent wildfires affecting the Rio Toro basin (Chile): large wood recruitment, dynamics, and budgeting. *EGU General Assembly 2019*, April 7-12, Wien, Austria.

Large Wood abundance: fluctuation along a gravel bed river affected by volcanic eruption. Increasing the understanding of recruitment and factors affecting the LW availability. 4th International Conference Wood in World Rivers, January 7-11, Valdivia, Chile.

Multi-temporal analysis of sediment connectivity in Blanco River (Chile). 5th IAHR Europe Congress — New Challenges in Hydraulic Research and Engineering. June 12-14 Trento (Italy).

Large Wood dynamics and abundance in the Blanco Este River affected by volcanic eruption. 5th IAHR Europe Congress — New Challenges in Hydraulic Research and Engineering. June 12-14 Trento (Italy).

Riverine environment affected by volcanic eruption. Post-eruption geomorphic change, sediment fluxes and wood transport (invited). The 3<sup>rd</sup> International Conference on Water Resource and Environment 2017, June 26<sup>th</sup> – 29<sup>th</sup>, Qingdao, China.

River basin affected by rare perturbation events: the Chaiten volcanic eruption (solicited). *EGU General Assembly 2017*, April 23-28, Wien, Austria.

Relación entre vegetación riparia y transporte de madera de gran tamaño. ¿Cuales son las ventajas para la mitigación que emergen debido a la presencia de estas unidades vegetacionales? (in spanish) RiNA, Riesgo Hidraulicos, Madera y Geomorfologia de Rios, March 17, 2017. Universidad Austral de Chile, Valdivia, Chile.

Localized geomorphic effects attributable to the presence of in-channel wood along two Italian gravel-bed rivers: preliminary results. River Flow 2016 – Eighth International Conference on Fluvial Hydraulics, July 12-15, 2016, St. Louis, USA.

Can this approach be useful to detect, to classify and to filter Large Wood from TLS data clouds? *EGU General Assembly 2016*, April 18-22, Wien, Austria.

Sampling riparian vegetation and morphology with cross sectional transects: first results from three North-eastern Italian rivers. *Wood in World Rivers 3 (WWR3)*, 06 -10 July 2015, Padova, Italy.

Riparian forest structure, vegetation cover and flood events in the Piave River. *Debris Flow 2012*, 4th International Conference on Monitoring, Simulation, Prevention and Remediation of Dense and Debris Flow, 29 - 31 May 2012, Dubrovnik, Croatia.

Medium term fluvial island evolution in relation with flood events in the Piave River. *Debris Flow 2012*, 4th International Conference on Monitoring, Simulation, Prevention and Remediation of Dense and Debris Flow, 29 - 31 May 2012, Dubrovnik, Croatia.

Assessing short term erosion-deposition processes of the Brenta River using LiDAR surveys. *Debris Flow 2012*, 4th International Conference on Monitoring, Simulation, Prevention and Remediation of Dense and Debris Flow, 29 - 31 May 2012, Dubrovnik, Croatia.

Using Terrestrial Laser Scanner to assess the morphological dynamics of a gravel-bed river. Erosion and sediment yields in the changing environment, ICCE 2012 International Symposium, 11-15/10/2012, Chengdu (China).

An update of the magnitude-frequency analysis of Rio Cordon (Italy) bedload data after 25 years of monitoring. . Erosion and sediment yields in the changing environment, ICCE 2012 International Symposium, 11-15/10/2012, Chengdu (China).

Characterization of fluvial islands along three different gravel-bed rivers of north-eastern Italy. AIIA13, Horizons in Agricultural, Forestry and Biosystems Engineering. September 8-12 2013, Viterbo, Italy.

### **International field measurements campaigns:**

1. Alps (Slovenia): 2007;
2. Central Andes (Cile): 2005 – 2006 – 2017 – 2018 - 2019;
3. South Island (New Zealand): 2008 – 2009;
4. North Island (New Zeland): 2018;
5. Patagonia (Cile): 2013 – 2014 – 2015 – 2016 – 2017 – 2018;
6. Quebec (Canada): 2017;
7. Poland: 2019.

### **National and International cooperation:**

1. Mario Aristide Lenzi, Università degli Studi di Padova (Italy);
2. Tommaso Sitzia, Università degli studi di Padova (Italy);
3. Marco Cavalli, IRPI – CNR, Padova (Italy);
4. Francesco Comiti, Libera Università di Bolzano (Italy);
5. Walter Bertoldi, Università di Trento (Italy);
6. Virginia Ruiz-Villanueva, University of Genève (Switzerland);
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10. Frédéric Liebault, IRSTEA (France);
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15. Luca Mao, Pontificia Universidad Catolica de Chile (Chile);

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17. Maxime Boivin, Université du Québec (Canada);
18. Murray D. Hicks, National Institute of Water and Atmospheric Research (New Zealand);
19. Jo Hoyle, National Institute of Water and Atmospheric Research (New Zealand);
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