

# Curriculum vitae

## Michele Larcher

Born January 18<sup>th</sup> 1972 in Merano (BZ, Italy)

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## I. PROFESSIONAL POSITION:

2016-present: Associate Professor in the scientific sector ICAR/01 (Hydraulics) at the Free University of Bozen-Bolzano, Faculty of Science and Technology.

2005-2016: Assistant Professor (“ricercatore confermato”) in the scientific sector ICAR/01 (Hydraulics) at the University of Trento, Department of Civil, Environmental and Mechanical Engineering.

2003-2005: Post-doc at CUDAM (University of Trento) and Professional Engineer.

## II. EDUCATION:

Ph.D. in Hydraulic Engineering, University of Padova, Italy (2003).

Master in Environmental Engineering, summa cum laude, print dignity and honor mention for the career, University of Trento, Italy (1998).

## III. OTHER QUALIFICATIONS:

National Scientific Habilitation (Abilitazione Scientifica Nazionale 2012) as associate professor in the scientific sector ICAR/01 (Hydraulics)

Habilitation for the exercise of the engineering profession (1999).

## IV. LANGUAGES:

Italian: mother tongue

German: second tongue, fluent (Bilingualism certificate A; level C1 equivalent)

English: foreign tongue, fluent (*IELTS*: listening 7.0, reading 8.5, writing 7.0, speaking 7.0, overall band score 7.5; level C1 equivalent)

## V. PROFESSIONAL HONORS, AWARDS AND FELLOWSHIPS:

Winner of the Short Term Mobility 2007 Grant, financed by C.N.R.

Finalist at the Italian national competition for the prize for the best scientific activity of young researchers in hydraulic disciplines in the biennium 2004-2006, established by the Italian Group of Hydraulics GII (2006).

Testimonial of merit as the best master student in Environmental and Land Engineering at the Faculty of Engineering of the University of Trento, all through twenty years since its foundation in 1985 (2005).

Research Award for Foreign Specialists, Public Works Research Institute, Tsukuba, Japan (2001).

Master thesis obtained summa cum laude, print dignity and honor mention for the career (1998).

Winner of the national literary competition “40 Years of Italian Narrative Literature” (“40 Anni di Narrativa Italiana”), organized by the Foundation “Fondazione Maria e Goffredo Bellonci” in Naples. His writing was selected for publication in the collection *Oscar Mondadori* (1990).

Fellow of the *International Association for Hydro-Environment Engineering and Research* (IAHR).

Fellow of the European Geosciences Union (EGU).

Fellow of GII (Italian Group of Hydraulics).

## **VI. VISITING APPOINTMENTS:**

July-August 2016, Visiting Associate Professor, Department of Civil and Environmental Engineering, Cornell University, NY, USA.

March 2016, Visiting Scientist, Max Planck Institute for the Physics of Complex Systems (MPIPKS), Dresden, Germany.

October-November 2013, Visiting Scientist, Kavli Institute for Theoretical Physics, University of California at Santa Barbara, CA, USA.

July 2012 – January 2013: Visiting Scientist, Department of Civil and Environmental Engineering, Cornell University, NY, USA.

June - September 2007: Visiting Scientist, Department of Theoretical and Applied Mechanics, Cornell University, NY, USA.

June 2005: Visiting Scientist, National Taiwan University (Taipei) and National Chung-Hsing University (Taichung), Taiwan.

February - March 2001: Visiting Scientist, Public Works Research Institute, Tsukuba, Japan.

## **VII. INVITED SEMINARS AND LECTURES:**

University of Padova, 52° Corso di Cultura in Ecologia - Debris flows in a changing environment: processes, controls, consequences, San Vito di Cadore, Italy, 6-8 June 2016.

Max Planck Institute for the Physics of Complex Systems (MPIPKS), Dresden, Germany, March 2016.

Kavli Institute for Theoretical Physics, University of California at Santa Barbara, CA, USA, October 2013.

Teaching professor of “Granular flows”, Doctoral Course Grasmec, Université catholique de Louvain, Belgium, 2011.

University of Rennes I, France, January 2009.

Cornell University, Department of Theoretical and Applied Mechanics, Ithaca (NY), USA, June 2007.

Invited general lecture, International Conference on Hillslope Stabilization and Environmental Restoration, Taipei, Taiwan, June 2005.

Isaac Newton Institute for Mathematical Sciences, Cambridge (UK) October 2003.

Public Works Research Institute, Tsukuba, Japan, February 2001.

**VIII. DIDACTIC ACTIVITY AT THE FREE UNIVERSITY OF BOZEN-BOLZANO:**

Teaching professor of “Fluid Mechanics”, Bachelor in Industrial and Mechanical Engineering, A.Y. 2013/14 – present.

**IX. DIDACTIC ACTIVITY AT THE UNIVERSITY OF TRENTO:**

Teaching Professor of “Elements of hydraulics and hydraulic constructions”, Bachelor in Environmental Engineering and Bachelor in Civil Engineering, A.Y. 2013/14 - 2015/16.

Teaching Professor of the module of Hydraulics (equivalent to half course) within the course “Hydraulic constructions with notions of hydraulics”, University of Trento, Master course in Architecture and Building Engineering, A.Y. 2014/15.

Teaching Professor of “Design and management of irrigation plants”, Interfaculty Bachelor in Viticulture and Enology (University of Trento, University of Udine and Edmund Mach Foundation), A.Y. 2013/14 – 2014/15.

Teaching Professor of “Irrigation plants”, Bachelor in Industrial and Food Engineering, A.Y. 2007/08 to 2012/13.

Teaching Professor of the “Granular Flows” module within the “Fluid mechanics” Doctoral Course in Environmental Engineering, A.Y. 2010/11.

Teaching Professor of “Water/soil interaction and irrigation techniques”, Interfaculty Master Course (Padova-Udine-Verona) in Viticulture, Enology and Wine Markets, A.Y. 2006/07 to 2009/10.

Teaching Assistant of “Fluvial engineering”, Master Course in Environmental Engineering, A.Y. 2010/11 - 2015/16.

Teaching Assistant of “Fluvial engineering and river restoration”, Master Course in Environmental Engineering, A.Y. 2005/06 to 2009/10.

Teaching Assistant of “Project of fluvial engineering”, Master Course in Environmental Engineering, A.Y. 2005/06 to 2009/10.

Teaching Assistant of “River restoration”, Master Course in Environmental Engineering, A.Y. 2000/01 to 2004/05.

**X. DIDACTIC ACTIVITY AT OTHER INSTITUTIONS:**

Teaching professor of “Granular flows”, Doctoral Course *Grasmech*, Université catholique de Louvain, Belgium, 2011 (in English).

University of Rome “La Sapienza”, C.E.R.I., Valmontone (Rome), 2006 (8 hours of frontal lecture, in Italian).

Professional Association of Geologists at the Province of Vicenza, Vicenza, 2006 (8 hours of frontal lecture, in Italian).

Geobrigg Italy, Arona (Italy) and Illgraben (Switzerland), 2005 (2 hours of frontal lecture, in Italian).

CISM (International Centre for Mechanical Sciences), 2005 (2 hours of frontal lecture, in English).

THARMIT Master Course “Debris and mud flows: practical tools for hazard assessment, technical countermeasures and warning systems for the mitigation of risk”, 2003 (in English).

CODEMM, Association for the Protection of Mountain Ecosystem, Atessa (CH), A.A. 2003-04 (14 hours of frontal lecture, in Italian).

MODECI, Mathematical Modeling of Hydro-geological Disasters. University of Calabria, 2003 (10 hours of frontal lecture, in Italian).

SUPSI, Professional University School of the Italian Switzerland, Institute for Earth Sciences, Canobbio, Switzerland, 2003 (3 hours of frontal lecture, in English).

#### **XI. SCIENTIFIC ACTIVITY:**

The scientific activity of the candidate is centered on themes relevant to fluid mechanics. At present the candidate is mainly involved in the study of granular flows and non-Newtonian fluids rheology, with applications to environmental engineering and industrial and food engineering. His studies are theoretical and experimental and he also developed original imaging methods for the three-dimensional experimental analysis of granular flows, suitable for tracking the trajectories of the individual grains and reconstructing the velocity, velocity fluctuations (granular temperature) and concentration fields.

He studied debris flows, mudflows and snow avalanches dynamics, both from the point of view of base research and of applied research. The candidate participated to many support programs to territorial survey agencies, among the others finalized to hazard mitigation in the Campania Region (Italy) and in the state of Vargas (Venezuela) after the tremendous debris flow disasters that affected Sarno in 1998 and Vargas in 1999, and was requested in 2014 to develop a planning and design procedure for integral risk mitigation systems in the Province of Bolzano, Italy.

The candidate is author of many scientific publications, including papers on peer-reviewed international journals and parts of books with international diffusion. He took part to many national projects and to 4 European projects (THARMIT, IMPACT, IRASMOS and STEEP STREAMS). Within the *Alpine Space* Project PARAMOUNT (European Commission, Seventh Framework Programme) he was responsible for the snow-avalanches research group at the University of Trento and was involved in the definition of hazard mapping criteria for snow avalanches. Within the project CLIMAWARE (University of Trento, research projects 2014) he was responsible for workpackage WP3 on *Granular flow extremes: floods, sediment transport, debris flows and snow avalanches*.

#### **XII. TECHNOLOGICAL TRANSFER:**

Scientific responsible for the elaboration of a set of procedures for integrated planning systems for the mitigation of flood risk in the Autonomous Province of Bolzano, 2014.

Scientific responsible for the design of two exhibits, one on granular flow dynamics and one on river restoration, at the Gallery “Environmental Risks and Civil Protection” of the new Museum of Natural Sciences (MUSE) in Trento, 2013.

Scientific responsible, within the *Alpine Space* Project PARAMOUNT, for the snow avalanches research group at CUDAM, with the goal of applying mathematical models to case studies, of defining hazard mapping criteria and design an instrumented field test site, 2012.

#### **XIII. ORGANIZATION OF CONFERENCES AND MAJOR ROLES:**

Organizer of the session on *Granular Flows* at the *First European IAHR Congress*, Edinburgh, UK, 4-6 May 2010.

Chairman of the session *Numerical modelling of debris flows* at the *5th International Conference on Debris-Flow Hazards Mitigation: Mechanics, Prediction and Assessment*, Padova, 14-17 June 2011.

Member of the Scientific Secretariat of the XXIX Italian Conference of Hydraulics and Hydraulic Constructions, Trento, 7-10 September 2004.

#### **XIV. PARTICIPATION IN SCIENTIFIC COMMITTEES:**

Member of the *Consulta for Research and Innovation*, Autonomous Province of Bolzano-Bozen, 2014 - present.

Member of the *Technical Committee* of the Autonomous Province of Bolzano-Bozen, 2014 - present.

Member of the international committee for the grant of the *Scientific Award of South Tyrol* and of the *South Tyrol's Research Award for young scientists*, Autonomous Province of Bolzano-Bozen, 2014.

Member of the international committee for the grant of the *Scientific Award of South Tyrol* and of the *South Tyrol's Research Award for young scientists*, Autonomous Province of Bolzano-Bozen, 2013.

#### **XV. REVIEWER OF THE FOLLOWING SCIENTIFIC JOURNALS:**

Advances in Water Resources;

Bulletin of Engineering Geology and the Environment;

Earth Surface Processes and Landforms;

Ecological Engineering;

Granular Matter;

Journal of Hydraulic Engineering (ASCE, *American Society of Civil Engineers*);

Journal of Hydrologic Engineering;

Journal of Hydraulic Research (IAHR, *International Association for Hydro-Environment Engineering and Research*);

Journal of Fluid Mechanics;

Journal of Mechanics of Materials and Structures;

Journal of Mountain Science;

Natural Hazards;

Proceedings of the Institution of Civil Engineers - Water Management;

Water;

Water Resources Research.

#### **XVI. ORGANIZATION AND SERVICE ACTIVITIES AT THE FREE UNIVERSITY OF BOZEN-BOLZANO:**

Member of the Committee of the Doctoral School *Sustainable Energy and Technologies (SET)*, 2016-present.

#### **XVII. ORGANIZATION AND SERVICE ACTIVITIES AT THE UNIVERSITY OF TRENTO:**

Delegate for the *Students orientation* by the School of Civil and Environmental Engineering, 2005-2016.

Aggregate member of the *Commission for the habilitation to the engineering profession* in 2006, 2008, 2009, 2010, 2011, 2013.

Teaching professor and co-organizer of the *Summer school on granular flows and sediment transport*, Trento, 24-31 July 2013.

Teaching professor and co-organizer of the *Summer school on environmental granular flows*, Trento, 28 July-1 August 2014.

Teaching professor and co-organizer of the Winter school *Mechanics of sediment transport: theory and models*, Trento, 25-29 January 2016.

Member of the *Committee for Industrial and Food Engineering*, 2010-2012.

Member of the Committee of the Doctoral School in Civil, Environmental and Mechanical Engineering , 2013-2016.

Member of the Committee of the Doctoral School in Environmental Engineering, 2006-2013.

Member of the Didactic Council *of the School of Civil Engineering*, 2013-2016.

Member of the Didactic Council *of the School of Environmental Engineering*, 2005-2016.

Supervisor of one PhD student and over 40 Bachelor and Master students and referee of one PhD student.

#### **XVIII. FINANCED PROJECTS:**

WATERWORKS 2014 COFUNDED CALL: responsible of WP4 (*Defence structures against sediments*), STEEP STREAMS - Solid Transport Evaluation and Efficiency in Prevention: Sustainable Techniques of Rational Engineering in Advanced MethodS, European Community, 2016.

CLIMAWARE: responsible of WP3, *Granular flow extremes: floods, sediment transport, debris flows and snow avalanches*, University of Trento, 2015.

E-LEARNING: principal responsible, Development of the e-learning module *The restoration of Alpine torrents*, Università della Calabria, 2014.

SEDALP: co-responsible, Elaboration of a set of procedures for integrated planning systems for the mitigation of flood risk, Autonomous Province of Bolzano/Bozen, 2014.

MUSE: principal responsible, Design of the exhibits for the gallery “Environmental Risks and Civil Protection” for the Museum of Natural Sciences - MUSE (project reference CIG XB505C705B), Museo delle Scienze di Trento, 2013.

PARAMOUNT: principal responsible, Rheological characterization of snow avalanches (Alpine Space; Project reference: 2-2-2-AT - subcontractor), Autonomous Province of Trento, 2012.

GNFM 2008: responsible of the Research Unit of Trento, Young Researchers Project 2008: “Theoretica, numerical and experimental modelling of debris flows”, National Group for Mathematical Physics, 2008.

Short Term Mobility 2007: principal responsible, CNR, 2007.

PRIN 2005: Participant to the research program, Rheology of granular and pyroclastic flows: physical and numerical modelling (prot. 2005047032\_004), MIUR, 2005.

IRASMOS: Participant to the research program, Integral Risk Management of Extremely Rapid Mass Movements (FP6; Project Reference: 018412), European Community.

IMPACT, Participant to the research program, Investigation of Extreme Flood Processes and Uncertainty (Project Reference: EVG1-CT-2001-00037), European Community.

THARMIT, Participant to the research program, Torrent Hazard Control in the European Alps: Practical tools and methodologies for hazard assessment and risk mitigation (FP5; Project Reference: EVG1-CT-1999-00012), European Community.

#### **XIX. LIST OF SELECTED PUBLICATIONS:**

##### ***Peer-reviewed ISI international journals:***

Larcher, M., Jenkins, J.T. (2015). “The evolution of segregation in dense inclined flows of binary mixtures

- of spheres”. *Journal of Fluid Mechanics*, 782, 405-429.
- Larcher, M., Jenkins, J.T. (2014) “Saturated, collisional flows of spheres over an inclined, erodible bed between vertical sidewalls”. *Advances in Water Resources*, 72, 15-21.
- Armanini, A., Larcher, M., Dumbser, M., Nucci, E. (2014) “Submerged granular channel flows driven by gravity”. *Advances in Water Resources*, 63, 1-10.
- Larcher, M., Jenkins, J.T. (2013) “Segregation and mixture profiles in dense, inclined flows of two types of spheres”. *Physics of Fluids*, 25, 113301.
- Spinewine, B., Capart, H., Fraccarollo, L., Larcher, M. (2011). “Laser stripe measurements of near-wall solid fraction in channel flows of liquid-granular mixtures”. *Experiments in Fluids*, 50(6), 1507-1525.
- Berzi, D., Jenkins, J.T., Larcher, M. (2010). “Debris flow: recent advances in experiments and modeling”. *Advances in Geophysics*, 52, 103-138.
- Armanini, A., Larcher, M., Fraccarollo, L. (2009). “Intermittency of rheological regimes in uniform liquid-granular flows”. *Physical Review E*, 79, 051306.
- Armanini, A., Fraccarollo, L., Larcher, M. (2008). “Liquid-granular channel flow dynamics”. *Powder Technology*, 182: 218-227.
- Larcher, M., Fraccarollo, L., Armanini, A., Capart, H. (2007). “Set of measurement data from flume experiments on steady uniform debris flows”. *Journal of Hydraulic Research*, 45, 59-71.
- Fraccarollo, L., Larcher, M., Armanini, A. (2007). “Depth-averaged relations for granular-liquid uniform flows over mobile bed in a wide range of slope values”. *Granular Matter*, 9, 145-157.
- Armanini, A., Capart, H., Fraccarollo, L., Larcher, M. (2005). “Rheological stratification of liquid-granular debris flows down loose slopes”. *Journal of Fluid Mechanics*, 532, 269-319.
- Spinewine, B., Capart, H., Larcher, M., Zech, Y. (2003). “Three-dimensional Voronoï imaging methods for the measurement of near-wall particulate flows”. *Experiments in Fluids*, 34, 227-241.
- Busnelli, M. M., Stelling, G., Larcher, M. (2002). Closure to "Numerical morphological modeling of open-check dams" by Marcela M. Busnelli, Guus S. Stelling, and Michele Larcher, *Journal of Hydraulic Engineering*, ASCE, 128 (9), 873-873.
- Busnelli, M. M., Stelling, G., Larcher, M. (2001). “Numerical morphological modeling of open check dams”, *Journal of Hydraulic Engineering*, ASCE, 127(2), 105-114.
- Armanini, A., Larcher, M. (2001). “Rational criterion for designing opening of slit check dam”, *Journal of Hydraulic Engineering*, ASCE, 127(2), 94-104.

### **Parts of book:**

- Armanini, A., Fraccarollo, L., Larcher, M. (2005). “Debris Flow”. *Encyclopedia of Hydrological Sciences*, M. G. Anderson Editor. John Wiley & Sons, Chapter 142, Vol. 4(12), 2173-2186 (invited paper).
- Armanini, A., Fraccarollo, L., Larcher, M. (2004). “Controllo delle colate detritiche nell’ambito delle misure di salvaguardia territoriale”. In *Tecniche per la Difesa dall’Inquinamento. Atti del corso di aggiornamento*, Politecnico di Milano, a cura di U. Maione. Ed. Bios, Cosenza, 235-270.
- Armanini, A., Fraccarollo, L., Larcher, M. (2003). “Colate di detriti e tecniche di sistemazione idraulica”. In *La progettazione di opere idrauliche in zona montana*. Atti del corso di aggiornamento 7-11 ottobre 2002, Politecnico di Milano, a cura di U. Maione, A. Brath e P. Mignosa. Ed. Bios, Cosenza, 511-546.
- Larcher, M., Peluso, A., Zanini, D. (1993). “Dante Troisi, Diario di un giudice”, in: *Fondazione Maria e Goffredo Bellonci (a cura di), 40 anni di narrativa italiana, vol. II 1955-65*, tomo II: M2, Oscar Mondadori, Arnoldo Mondadori, Cles, 341-347.

### **International Conferences:**

- Nucci, E., Armanini, A., Larcher, M. (2014). “The role of interphase forces in submerged granular flows driven by gravity”. Proceedings of the International Conference on Fluvial Hydraulics, RIVER FLOW 2014, Lausanne, Switzerland, 3-5 September 2014, 859-865.

- Larcher, M., Jenkins, J.T. (2013). "Segregation in dense, dry, inclined flows of binary mixtures of grains". *AIP Proceedings*, vol. 1542, p. 718-721.
- Larcher, M., Jenkins, J.T. (2013). "Saturated, inclined, collisional flows of spheres between vertical sidewalls over an erodible bed" in *Two-phase modelling for Sediment dynamics*, Chatou: SHF, 2013. Atti di: THESIS-2013, Chatou, June 10-12, 2013.
- Armanini, A., Dumbser, M., Nucci, E., Larcher, M. (2013). "Dynamics of submerged gravitational granular flows" in E. Vázquez-cendón, A. Hidalgo, L.P. Garcia-navarro and Cea (a cura di), Numerical methods for Hyperbolic Equations: Theory and applications. London: Taylor & Francis Group, p. 157-163, ISBN: 9780415621502.
- Armanini, A., Larcher, M., Odorizzi, M. (2011). "Dynamic impact of a debris flow front against a vertical wall". *Italian Journal of Engineering Geology and Environment – Book*, Casa Editrice Università La Sapienza, Roma, 1041-1049, doi: 10.4408/IJEGE.2011-03.B-113.
- Larcher, M., Jenkins, J.T. (2010). "Particle size and density segregation in dense, dry granular flows". *First European IAHR Congress*, Edinburgh, UK, 4-6 May 2010.
- Armanini, A., Larcher, M., Odorizzi, M. (2010). "Dynamic impact of steep waves against a vertical wall". *First European IAHR Congress*, Edinburgh, UK, 4-6 May 2010.
- Larcher, M., Jenkins, J.T. (2010). "Size segregation in dry granular flows of binary mixtures". *AIP Proceedings*, vol. 1227, p. 363-370.
- Larcher, M., Jenkins, J.T. (2009). "The Influence of Size Segregation in Particle-Fluid Flows". *AIP Proceedings*, vol. 1145, p. 1055-1058.
- Fraccarollo, L., Larcher, M., Paternolli, M. (2008). "Flume experiments on local scours around abutments in rivers and torrents". *River Flow 2008*, Altınakar, Kokpınar, Gogus, Tayfur, Kumku & Yildirim (eds), Çeşme-Izmir, Turkey, 3-5 September 2008, Vol. 2, 1585-1592.
- Armanini, A., Fraccarollo, L., Gambarotto, S., Larcher, M. (2008). "Experimental determination of the restitution coefficient for collisional granular-liquid flows". *River Flow 2008*, Altınakar, Kokpınar, Gogus, Tayfur, Kumku & Yildirim (eds), Çeşme-Izmir, Turkey, 3-5 September 2008, Vol. 2, 1717-1724.
- Armanini, A., Fraccarollo, L., Larcher, M. (2007). "Frictional-collisional intermittency in liquid-granular flows". *32<sup>nd</sup> IAHR Congress*, Venice, Italy, 1-6 July 2007.
- Armanini, A., Dalri, C., Larcher, M. (2006). "Slit-check dams for controlling debris flow and mudflow". *11<sup>th</sup> Congress INTERPRAEVENT 2006*, Niigata, Japan, 25-29 September 2006.
- Armanini, A., Larcher, M., Fraccarollo, L. (2006). "Intermittency of rheological regimes in uniform liquid-granular flows". *River Flow 2006*, Lisboa, Portugal, 6-8 September 2006.
- Armanini, A., Dalri, C., Fraccarollo, L., Larcher, M., (2004). "Equilibrium conditions for debris and mud-flow", *IX International Symposium on Landslides*. Rio de Janeiro, June 28 - July 2 2004.
- Armanini, A., Dalri, C., Della Putta, F., Larcher, M., Rampanelli, L., Righetti, M. (2004). "Design criteria of mudflow breakers: experimental and theoretical approach". *10<sup>th</sup> Congress INTERPRAEVENT 2004*, Riva del Garda, Italy, 24-28 May 2004.
- Armanini, A., Dalri, C., Della Putta, F., Larcher, M., Rampanelli, L., Righetti, M. (2004). "Experimental analysis on the hydraulic efficiency of mudflow breakers". *International Conference on Hydraulics of Dams and River Structures*, Tehran, Iran, 26-28 April 2004, Balkema, Netherlands, 385-392. ISBN:90-5809-632-7.
- Armanini, A., Fraccarollo, L., Larcher, M. (2003). "Dynamics and energy balances in uniform liquid-granular flows". *International Workshop on Occurrence and Mechanisms of Flow-like Landslides in Natural Slopes and Earthfills*, Sorrento, Italy, 14-16 May 2003, L. Picarelli editor. Patron editore, Bologna, 131-138.
- Armanini, A., Dalri, C., Fraccarollo, L., Larcher, M., Zorzin, E. (2003). "Experimental analysis of the general features of uniform mud-flow", *3<sup>rd</sup> Int. Conf. Debris-Flow Hazard Mitigation*, Davos, Switzerland, 10-12 September 2003. Vol. 1, 423-434.
- Larcher, M., Armanini, A. (2000). "Design criteria of slit check dams and downstream channels for debris



flows”, *International Workshop on the Debris Flow Disaster of December 1999 in Venezuela*, Caracas, November 27<sup>th</sup>-December 1<sup>st</sup> 2000.

Armanini, A., Larcher, M., Majone, B., Rigon, R., Benedetti, G., Mizuno, H. (2000). “Restoration of the basins Quebrada San José de Galipán and Quebrada el Cojo”, *International Workshop on the Debris Flow Disaster of December 1999 in Venezuela*, Caracas, November 27<sup>th</sup>-December 1<sup>st</sup> 2000.

### **National Conferences:**

Larcher, M., Jenkins, J.T. (2014). “Segregazione granulometrica in misture binarie”. *XXXIV Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Bari, 8-10 settembre 2014, 697-698.

Armanini, A., Larcher, M., Odorizzi, M. (2010). “Impatto dinamico di una colata di detriti contro una parete verticale”. *XXXII Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Palermo, 14-17 settembre 2010.

Fraccarollo, L., Larcher, M., Paternolli, M. (2008). “Studio sperimentale sugli scavi localizzati in prossimità di spalle di ponti in fiumi e torrenti”. *XXXI Convegno di Idraulica e Costruzioni Idrauliche*, Perugia, Italy, 9-12 September 2008, Morlacchi editore.

Armanini, A., Fraccarollo, L., Gambarotto, S., Larcher, M. (2008). “Determinazione sperimentale del coefficiente di restituzione per i fluidi granulari”. *XXXI Convegno di Idraulica e Costruzioni Idrauliche*, Perugia, Italy, 9-12 September 2008, Morlacchi editore.

Armanini, A., Larcher, M., Fraccarollo, L. (2006). “Intermittenza di regimi reologici in colate liquido-granulari”. *XXX Convegno di Idraulica e Costruzioni Idrauliche*, Roma, 11-14 settembre 2006.

Armanini, A., Dalri, C., Fraccarollo, L., Larcher, M., (2005). “Caratterizzazione reologica del fango mirata ad una corretta progettazione dei dispositivi frangicolata”. *La mitigazione del rischio da colate di fango a Sarno e negli altri Comuni colpiti dagli eventi del maggio 1998*, Napoli, 2 e 3 Maggio 2005 - Sarno 4 e 5 Maggio 2005.

Armanini, A., Dalri, C., Della Putta, F., Larcher, M., Rampanelli, L., Righetti, M. (2004). “Progettazione di opere frangicolata”. *XXIX Convegno di Idraulica e Costruzioni Idrauliche*, Trento, 7-10 settembre 2004, Atti-Vol. I, 941-948.

Armanini, A., Dalri, C., Della Putta, F., Larcher, M., Sartori, F. (2004). “Opere diffuse per la difesa dalle colate di fango”. *XXIX Convegno di Idraulica e Costruzioni Idrauliche*, Trento, 7-10 settembre 2004, Atti-Vol. I, 933-940.

Dalri, C., Fraccarollo, L., Larcher, M., Armanini, A. (2004). “Indagine teorico-sperimentale per la caratterizzazione del comportamento costitutivo dei miscugli di origine sintetica e naturale”. *XXIX Convegno di Idraulica e Costruzioni Idrauliche*, Trento, 7-10 settembre 2004, Atti-Vol. I, 429-436.

Armanini, A., Fraccarollo, L., Larcher, M. (2004). “Rivisitazione della teoria di Bagnold secondo le teorie cinetiche”. *XXIX Convegno di Idraulica e Costruzioni Idrauliche*, Trento, 7-10 settembre 2004, Atti-Vol. I, 325-331.

Armanini, A., Fraccarollo, L., Larcher, M. (2003). “Osservazioni sulla reologia di colate di detriti granulari”. *Scritti in onore di Lucio Tagliatela*. Napoli, 24 maggio 2002. GNDCI, Pubblicazione n° 2811, 373-391.

Masullo, C., Larcher, M., Piccoli, A., Sartori, F. (2002). “Soglie ad altezza variabile per indurre la divaricazione di colate rapide di detriti e di fango”. *XXVIII Convegno di Idraulica e Costruzioni Idrauliche*, Potenza, 16-19 Settembre 2002, Atti-Vol. V, 159-166.

Armanini, A., Dalri, C., Fraccarollo, L., Larcher, M., Zorzin, E. (2002). “Osservazioni sulla reologia di colate di fango non omogeneo”. *XXVIII Convegno di Idraulica e Costruzioni Idrauliche*, Potenza, 16-19 Settembre 2002, Atti-Vol. V, 149-158.

Armanini, A., Fraccarollo, L., Larcher, M. (2002). “Recenti sviluppi della dinamica delle colate di fango e di detriti”, Accademia Nazionale dei Lincei – Atti del convegno *Il dissesto idrogeologico: inventario o prospettive*, Roma, 5 Giugno 2001, Stabilimento Tipografico Pliniana, Selci-Lama (PG), 45-65 (invited paper).

Armanini, A., Larcher, M., Fraccarollo, L., Papa, M. (2001). “Considerazioni sulla dinamica delle colate di fango e sulle opere per il loro controllo”. Atti del convegno *Forum per il rischio idrogeologico in*

*Campania: fenomeni di colata rapida di fango nel maggio '98*, Napoli 22 giugno 2001, 75-82.

Larcher, M., Armanini, A. (2000). “Dimensionamento della larghezza dell’apertura delle briglie a fessura”. *XXVII Convegno di Idraulica e Costruzioni Idrauliche*, Genova, 12-15 Settembre 2000, Atti-Volume I, 289-297.

#### ***Published abstracts:***

Meninno, S., Armanini, A., Larcher, M. (2015). “Experimental investigation on dry granular flows driven by gravity”. *AGU Fall Meeting 2015*, San Francisco, USA, 14-18 December 2015.

Abera W., Bancheri M., Bellin A., Bozzini E., Conci N., Fracasso A., Fraccarollo L., Geneletti D., Giovannini L., Laiti L., Larcher M., Majone B., Meninno S., Nucci E., Pertile M., Piccolroaz S., Rosatti G., Sansone E., Sartori M., Tomasi E., Toro M., Zardi D., Zorzi N., Zugliani D., Schiavo S., Rigon R. (2015). “Anticipating the impact of climatic changes on future availability of water resources and hydro-geological risks: an overview from the project CLIMAWARE”. *UNESCO 1st International Conference on Anticipation*, Trento, 5-7 November 2015.

Larcher, M., Jenkins, J.T. (2013) “Size segregation in dense, dry, inclined flows of binary granular mixtures”. *EGU General Assembly 2013*, Vienna, 08-12 April 2013.

Armanini, A., Larcher, M., Nucci, E., Dumbser, M. (2013) “Mechanics of submerged granular flows driven by gravity”. *EGU General Assembly 2013*, Vienna, 08-12 April 2013.

Armanini, A., Larcher, M., Nucci, E. (2011). “Dense, gravity-driven granular-liquid flows down steep channels”. *AGU General Assembly 2011*, San Francisco, USA, 5-9 December 2011.

Larcher, M., Jenkins, J.T. (2009). “Size segregation in granular fluid flows”. *IMA Conference on Dense Granular Flows*, Isaac Newton Institute, Cambridge, UK, 5 - 9 January 2009.

Larcher, M., Spinewine, B., Fraccarollo, L., Armanini, A. (2006), "Size-segregation in bimodal granular-liquid flows". *Gordon Research Conference on Granular & Granular-Fluid Flow*, Oxford, UK, 23 - 28 July 2006.

Larcher, M., Spinewine, B., Fraccarollo, L., Armanini, A. (2006). “Segregation in binary mixtures”. *EGU General Assembly 2006*, Wien, Austria, 02-07 April 2006.

Armanini, A., Fraccarollo, L., Larcher, M. (2006). “Frictional and collisional particle interactions in uniform debris flows”. *EGU General Assembly 2006*, Wien, Austria, 02-07 April 2006.

Larcher, M., Fraccarollo, L., Armanini, A. (2003) “Rheological stratification of high-concentration liquid-granular flows”. *Geophysical granular & particle-laden flows*, Isaac Newton Institute for Mathematical Sciences, Oxford, UK, 27 – 31 October 2003.

#### ***Thesis:***

Larcher, M. (2002) “Vertical structure of high concentration liquid-granular flows”. *Doctoral Thesis in Hydraulic Engineering*, University of Padova.

Larcher, M. (1998). “Analisi sperimentale del processo di riempimento a monte di briglie a fessura in moto vario”. *Master Thesis in Environmental Engineering*, University of Trento.

#### ***Books:***

Larcher, M. (2004) *Vertical structure of high concentration liquid-granular flows*. *Monographs of the School of Doctoral Studies in Environmental Engineering*, Università degli Studi di Trento, ISBN: 88-8443-080-1, vol. 2, p. 151. (Available online at <http://www.unitn.it/en/dree/9703/monograph-2-scheda-e-full-text>).

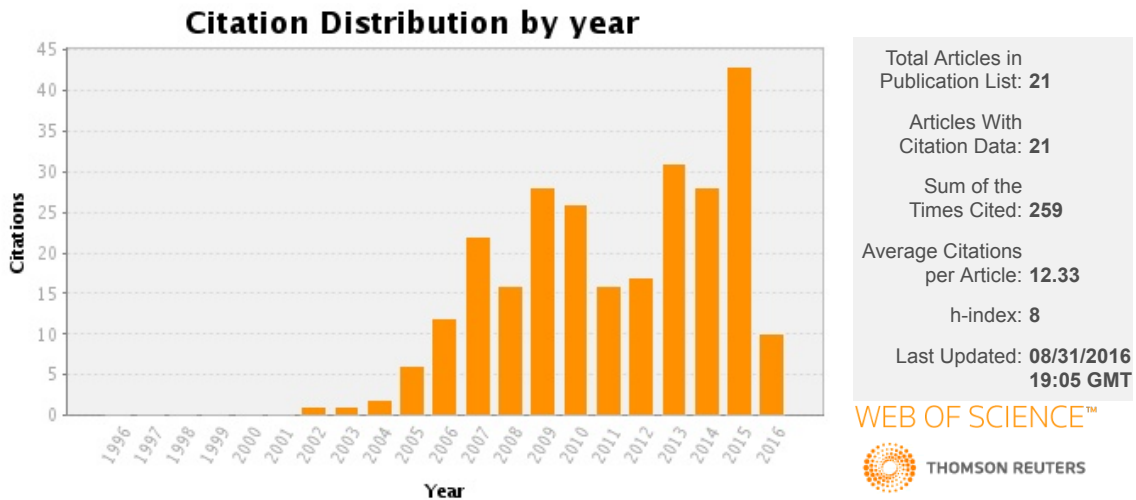
## **XX. CITATIONS METRICS:**

The work of the candidate is widely referenced within the scientific community, as acknowledged by his citations and his H-index in the databases of Scopus and of the ISI Web of Science. A synthesis of his citation metrics is given in the table below:

	documents	citations	H-index
Scopus	23	317	9
Web of Science	21	259	8

Detailed and updated citation metrics are available online using the following author ID:

- *ISI ResearcherID*: [F-7948-2013](#)
- *SCOPUS Author ID*: [6602789327](#)



Bolzano, September 1, 2016

Michele Larcher