



Europass Curriculum Vitae

Personal information

First name(s) / Surname(s) **Gianluca Marcato**

Work experience

Dates	1/04/2010 - present
Occupation or position held	Researcher - CNR Identification Number 11723
Main activities and responsibilities	Project manager for several research projects carried out with local stakeholders and private companies in the field of landslide risk. Coordinating the IRPI Geo-Risks Management Group. Landslide Hazard assessment, Mitigation and risk management strategies in the Eastern Italian Alps context, considering also climate change. Geological and numerical model of unstable slopes in order to assess the triggering factors and the run-out scenarios. Ground deformation and displacement analysis by means of monitoring data. Development of a real time optical fiber sensor monitoring system applied to landslide domains based on Brillouin Optical Domain Reflector method. The results of the research have been published in about 50 papers. Scopus Author ID: 12239297500. Referee for national and international journals. Lecturer of Engineering Geology Bsc courses in Italian Universities. Lecturer on advanced monitoring techniques at the Master level in Italy and abroad. Supervisor for bachelor and master theses, PhD research projects and Post-doc grants.
Name and address of employer	CNR-IRPI – National Research Council of Italy, Research Institute for Hydro-Geological Hazard Protection C.so Stati Uniti 4, 35127 Padova, Italy
Type of business or sector	Piazzale Aldo Moro 7 Roma 00185 Research
Dates	1/06/2000-31/03/2010
Occupation or position held	Research assistant
Main activities and responsibilities	Landslide hazard assessment: monitoring and modelling system and judgement of their reliability. Developing of new technologies to monitor deformations caused by landslides. Scientific consulting for Civil Defence office in the emergencies managing due to landslide event: response, repair-restoration phases, mitigation and prevention.
Name and address of employer	CNR-IRPI – National Research Council of Italy, Research Institute for Hydro-Geological Hazard Protection C.so Stati Uniti 4, 35127 Padova, Italy.
Dates	01/02/2011-30/06/2012
Occupation or position held	Lecturer
Main activities and responsibilities	Course on Engineering Geology
Name and address of employer	ALMA MATER STUDIORUM - University of Bologna - School of Engineering and Architecture Via Zamboni, 33 - 40126 Bologna, Italy
Dates	01/09/2015-present
Occupation or position held	Lecturer
Main activities and responsibilities	Course on Engineering Geology
Name and address of employer	University of Modena and Reggio Emilia - School of Civil and Environmental Engineering Via Vivarelli, 10 - 41100 Modena, Italy

Dates	2008/2009; 2009/2010; 2010/2011
Occupation or position held	Lecturer
Main activities and responsibilities	Master "Analisi, Valutazione e Mitigazione del Rischio Idrogeologico (AVAMIRI)". Topics: Valutazione del rischio di frana e del rischio idraulico, Interventi e opere per la mitigazione del rischio di frana.
Name and address of employer	Università degli Studi di Udine, Dipartimento di Ingegneria,

Education and training

Dates	05/04/2007
Title of qualification awarded	PhD in Engineering Geology
Principal subjects/occupational skills covered	Landslide Hazard evaluation in Passo della Morte (Italy)
Name and type of organisation providing education and training	University of Modena and Reggio Emilia, Italy

Dates	14/04/2000
Title of qualification awarded	Master Degree in Geology
Principal subjects/occupational skills covered	Geomorphological analysis of the Monte Lupo area (Val Gardena – Dolomites - Italy)
Name and type of organisation providing education and training	University of of Modena and Reggio Emilia, Italy

Mother tongue(s) **Italian**

Other language(s) **English; Spanish**

Self-assessment European level (*)	Understanding		Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production	
English		B2		B2		B		B1
Spanish		B2		B2		B1		B1

(*) Common European Framework of Reference for Languages

2009-2022

Projects, Participation in scientific committees of national and international events

- 2009-2013 Contract " Studies and monitoring activity of the left slope of Tagliamento River near Passo della Morte, municipality of Forni di Sotto (UD)" – Civil Defence of Regione Friuli Venezia Giulia (budget 420K€ - Scientific responsible)
- 2010-2014 Project " , "Innovative integrated Systems for Monitoring and assessment of hlgth risk LANDslides – SMILAND" - Funded by Cariparo
Founded Project of Excellence (research staff)
- 2010-2014 Project "Changing Hydro-meteorological Risks as Analyzed by a New Generation of European Scientists" - Funded by the European Community's 7th Framework Programme FP7/2007-2013 under Grant Agreement No. 263953 (Field Coordinator)
- 2013 Contract " Landslide monitoring and modelling of Corvara di Badia and Gardena pass landslides" –Corvara in Badia Municipality (budget 10K€ - Scientific responsible)
- 2014 Member of Organizing Committee of International Conference on Analysis and Management of Changing Risks for Natural Hazards. Padua 18-19 Novemeber 2014, Italy.
- 2013-2015 Project "MAppERS, Mobile Application for Emergency Response and Support" European project "Prevention and Preparedness projects under the Civil ProtectionFinancial Instrument – Directorate-General Humanitarian Aid and Civil Protection –ECHO" (research staff).
- 2015 participation in the SABO symposium in Sendai, organized by Ministry of land infrastructure, Transport and Tourism of Japan.
- 2016 Invited speaker to the 2016 International Workshop on Disaster Prevention and Mitigation Technology for Large-Scale Landslides at the Cheng Kung University, Tainan, Taiwan.
- 2017 Invited speaker to the International Conference on Disaster Prevention and Mitigation Technology for Large-Scale Landslides. Feng Chia University, Taichung, Taiwan, from 1st November to 2nd November 2017.
- 2015-2018 Contract " Studies and monitoring activity of the left slope of Tagliamento River near Passo della Morte, municipality of Forni di Sotto (UD)" – Civil Defence of Regione Friuli Venezia Giulia (budget 99K€ - Scientific responsible)
- 2016-2019 Project "Dikes and Debris Flows Monitoring by Novel Optical Fiber Sensors – DOMINO" Type HORIZON2020 project (EU Joint Programme ERA-NET Cofund WaterWorks 2014 (research staff)
- 2013-2021 Contract " Monitoring of the landslide affecting San Lorenzo road Tunnel in province of Udine (Italy)" – National Road Agency ANAS (budget 130 K€ - Scientific responsible)
- 2020-2025 Contract " Landslide monitoring, modelling and countermeasure works design in the Rotolon stream catchment" –Recoaro Terme Municipality (budget 200 K€ - Scientific responsible)
- 2020-2022 Project "Long-term monitoring of large landslides based on integrative systems of sensors and networks" SoLoMon - Type project FESR EU Programme – Provincia Autonoma di Bolzano (budget 80 K€ - Scientific responsible)

Post Doc Grants - tutoring

- 2009-2018 Giulia Bossi, in the field of landslide hazard assessment and landslide risk mitigation.
- 2018-2020 Giacomo Tedesco in the field of landslide investigation, modelling and mitigation.

PhD Projects – co-tutoring

- Giulia Bossi (XXVIII ciclo, PhD in Civil, Environmental and Materials Engineering, ALMA MATER STUDIORUM Università di Bologna). Statistical analysis of the error associated with the simplification of the stratigraphic profile of natural soils in geotechnical models.
- Daniela Codeglia (PhD at the School of Civil and Building Engineering Loughborough University UK). Development of an Acoustic Emission waveguide-based system for monitoring of rock slope deformation mechanism.
- Giacomo Tedesco (XXX ciclo, PhD in Civil, Chemical, Environmental and Materials Engineering, ALMA MATER STUDIORUM Università di Bologna), Infrastructures maintenance and countermeasures planning in complex geological and geomorphological settings.

Honors and Awards

- 2014, Best Paper award, 2014 Geosciences and Information Technologies GIT meeting (Sezione della Società Geologica Italiana), Montefalco,
2014. Premio "Ivo Ricchetti 2014", Addressing ground lithological variability for numerical modelling through a stochastic approach: The
Mortisa landslide case study Bossi G., Marcato G., Pasuto A., Borgatti L.
- 2017, Best oral presentation in oral session at the international congress "Challenges in geotechnical Engineering" Kiev, 20-22 November 2017 "A
Monitoring network to measure the cracks in a tunnel subject to shear deformation induced by landslide" Bossi G., Schenato L., Marcato G.

Selected Publications in indexed journals

- Marcato G.**, Rivelli F.R., Pasuto A., 2009. Mass movements in the Rio Grande Valley (Quebrada de Humahuaca, Northwestern Argentina): a
methodological approach to reduce the risk. *Advances In Geosciences*, 22, 59-65.
- Fujisawa K., **Marcato G.**, Nomura Y., Pasuto A., 2010. Management of a typhoon-induced landslide in Otomura (Japan). *Geomorphology*, 124, 150-
156.
- Marcato G.**, Mantovani M., Pasuto A., Zabuski L., Borgatti L., 2011. Monitoring, numerical modelling and hazard mitigation of the Moscardo
landslide (Eastern Italian Alps), *Eng. Geol.*, doi:10.1016/j.enggeo.2011.09.014
- Teza G., **Marcato G.**, Castelli E., Galgaro A., 2011. IRTROCK: A MATLAB toolbox for contactless recognition of surface and shallow weakness of a
rock cliff by infrared thermography. *Computers & Geosciences*, doi:10.1016/j.cageo.2011.10.022
- Marcato, G.**, Bossi, G., Rivelli, F., and Borgatti, L., 2012. Debris flood hazard documentation and mitigation on the Tilcara alluvial fan (Quebrada de
Humahuaca, Jujuy province, North-West Argentina), *Nat. Hazards Earth Syst. Sci.*, 12, 1873-1882, doi:10.5194/nhess-12-1873-2012.
- Schenato, L.; Palmieri, L.; Gruca, G.; Iannuzzi, D.; **Marcato, G.**; Pasuto, A. & Galtarossa, A. (2012), 'Fiber optic sensors for precursory acoustic
signals detection in rockfall events', *Journal of the European Optical Society - Rapid publications* 7(0)
- Schenato, L.; Palmieri, L.; Autizi, E.; Calzavara, F.; Vianello, L.; Teza, G.; **Marcato, G.**; Sassi, R.; Pasuto, A.; Galgaro, A. & Galtarossa, A. (2013),
'Rockfall precursor detection based on rock fracturing monitoring by means of optical fibre sensors', *Int. J. Sustainable Materials and
Structural Systems* 1(2), 123—141.
- Frigerio S., Schenato L., Bossi G., Cavalli M., Crema S., Mantovani M., **Marcato G.**, Pasuto A., 2014. *Landslide monitoring with an integrated
platform: methodology, design and case study*. *Rendiconti Online della Società Geologica Italiana*, (30), pp. 24-27. DOI:
10.3301/ROL.2014.06
- Frigerio S., Schenato L., Mantovani M., Bossi G., **Marcato, G.**, Cavalli M., Pasuto A., 2014. *A Web-based platform for automatic and continuous
landslide monitoring: The Rotolon case study*. *Computers & Geosciences*, (63), pp 96-105. DOI: 10.1016/j.cageo.2013.10.015
- Bossi, G., Frigerio, S., Mantovani, M., Schenato, L., Pasuto, A., **Marcato, G.**, 2013. *Hazard assessment of a potential rock avalanche in South Tyrol,
Italy: 3D modeling and risk scenarios*. *Italian Journal of Engineering Geology and Environment*, (6), pp.221–227.
- Bossi G., Cavalli, M., Crema, S., Frigerio, S., Quan Luna, B., Mantovani, M., **Marcato, G.**, Schenato, L., and Pasuto, A. 2015. Multi-temporal LiDAR-
DTMs as a tool for modelling a complex landslide: a case study in the Rotolon catchment (eastern Italian Alps), *Nat. Hazards Earth Syst.
Sci.*, 15, 715-722, doi:10.5194/nhess-15-715-2015
- Teza, G., **Marcato, G.**, Pasuto, a., Galgaro, A., 2015. Integration of laser scanning and thermal imaging in monitoring optimization and assessment
of rockfall hazard: a case history in the Carnic Alps (Northeastern Italy). *Natural Hazards* 76, 1535-1549.
- Bossi, G., Borgatti L., Mantovani M., **Marcato G.**, Gottardi G., Pasuto A. 2015 Lithological variability of the Mortisa landslide body: assessing
geomorphological evolution and numerical modelling through a stochastic approach, *Rendiconti Online della Società Geologica Italiana*,
(30), pp. 54-57. DOI: 10.3301/ROL.2015.06.
- Sinigardi G., Bossi G., Scuri A., **Marcato G.**, Borgatti L. 2015. Geological and numerical models as a tool to manage landslide risk: the Passo della
Morte case study (UD, Italy), *Rendiconti Online della Società Geologica Italiana*, (30), pp. 46-53. DOI: 10.3301/ROL.2015.35
- L. Schenato, G. Bossi, **G. Marcato**, and A. Pasuto, "Cumulative monitoring of strain in concrete structures with polymer optical fibers," *Rendiconti
Online Società Geologica Italiana*, vol. 39, pp. 19–22, 2016

- Petronici F., Borgatti L., Cervi F., Piccinini L., Bonaga G., **Marcato G.** 2015. Hydrogeological monitoring and modelling in the S. Lorenzo road tunnel area (Passo della Morte, Udine) for the design of countermeasure works Volume 39/2016, 93-96 DOI: 10.3301/ROL.2016.55.
- Bossi G., Borgatti L., Gottardi G. & **Marcato G.** 2016. The Boolean Stochastic Generation method - BoSG: A tool for the analysis of the error associated with the simplification of the stratigraphy in geotechnical models. Eng. Geol. 203, 99–106.
- Cola S., Gabrieli F., **Marcato G.**, Pasuto A., Simonini P. 2016. Evolutionary behaviour of the Tessina landslide. Rivista Italiana di Geotecnica, 50(1), 51-70.
- Tedesco G., Borgatti L., Bonduà L., **Marcato G.**, 2016. Joints representation strategy: Performance evaluation by a Finite Element code. A feasibility analysis of a tunnel infrastructure in the Carnian Alps. Rendiconti Online Società Geologica Italiana, vol. 41 pp. 333-336.
- Bossi, G., Mantovani, M., Frigerio, S., Schenato, L., **Marcato, G.**, Pasuto, A., 2016. A Monitoring Network to Map and Assess Landslide Activity in a Highly Anthropized Area. Geosciences 6(3), 40. doi:10.3390/geosciences603004.
- Bossi, G., Zabuski, L., Pasuto, A., **Marcato, G.**, 2016. Capabilities of Continuous and Discontinuous Modelling of a Complex, Structurally Controlled Landslide. Geotech. Geol. Eng. doi:10.1007/s10706-016-0057
- Codeglia, D., Dixon, N., Bossi, G. and **Marcato, G.** (2017) 'Alpine landslide risk scenario: run-out modelling using a 3d approach' Rendiconti Online della Società Geologica Italiana (42), pp. 14-17. DOI: 10.3301/ROL.2017.03
- Codeglia, D., Dixon, N., Fowmes G.J. and **Marcato, G.** (2017) 'Analysis of Acoustic Emission patterns for monitoring of rock slope deformation mechanism', Eng. Geol. 219, 21-31
- Cervi, F., Borgatti, L., Dreossi, G., **Marcato, G.**, Michelini, M., Stenni, B. (2017) "Isotopic features of precipitation and groundwater from the Eastern Alps of Italy: results from the Mt. Tinisa hydrogeological system" Environmental Earth Sciences, 76 (12). DOI: 10.1007/s12665-017-6748-9
- Bossi, G., Schenato, L., Marcato, G., (2017) "Structural Health Monitoring of Road Tunnel Intersecting a Large Landslide. Applied sciences (MDPI), 7 (12), 1271, DOI:10.3390/AP71212716,40
- Frigerio, S.; Schenato, L.; Bossi G.; Mantovani, M.; **Marcato, G.**; Pasuto, A. 2018. *Hands-On Experience of Crowdsourcing for Flood Risks. An Android Mobile Application Tested in Frederikssund, Denmark.* International Journal of Environmental Research and Public Health, 15, 1926, DOI: 10.3390/ijerph15091926
- Uchida, T., Sakurai, W., Iuchi, T., Izumiyama, H., Borgatti, L., **Marcato, G.**, Pasuto, A., (2018) Effects of episodic sediment supply on bedload transport rate in mountain rivers. Detecting debris flow activity using continuous monitoring Geomorphology 306, 198-209. <https://doi.org/10.1016/j.geomorph.2017.12.040>.
- Viero, A., Kuraoka, S., Borgatti, L., Breda, A., **Marcato G.**, Preto, N., Galgaro A., (2018) Numerical models for planning landslide risk mitigation strategies in iconic but unstable landscapes: The case of Cinque Torri. Eng. Geol., <https://doi.org/10.1016/j.enggeo.2018.03.018>
- Bossi G., Borgatti L., Gottardi G., **Marcato G.** 2019. *Quantification of the uncertainty in the modelling of unstable slopes displaying marked soil heterogeneity.* Landslides, Online First, DOI: 10.1007/s10346-019-01256-x
- Mantovani M., Bossi G., **Marcato G.**, Schenato L., Tedesco G., Titti G., Pasuto A. 2019. *New perspectives in landslide displacement detection using Sentinel-1 datasets.* Remote Sensing (MDPI). 11(18), 2135; DOI: 10.3390/rs11182135
- Bossi G., **Marcato G.** 2019. *Planning Landslide Countermeasure Works through Long Term Monitoring and Grey Box Modelling.* Geosciences (MDPI), 9(4), 185; DOI: 10.3390/geosciences9040185
- Titti, G., Bossi, G., Zhou, G.G.D., **Marcato, G.**, Pasuto, A. (2020). *Backward automatic calibration for three-dimensional landslide models.* Geoscience Frontiers, DOI: 10.1016/j.gsf.2020.03.011
- Elmo, D., Stead, D., Yang, B., **Marcato, G.**, Borgatti, L. (2021). A New Approach to Characterize the Impact of Rock Bridges in Stability Analysis Rock Mechanics and Rock Engineering <https://doi.org/10.1007/s00603-021-02488-x>

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