

Federico Agliardi

PhD, Associate Professor

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Short CV

Associate Professor of Engineering Geology at UNIMIB, geomechanics and landslide specialist. Degree in Geological Sciences and PhD in Earth Sciences (University of Milano). I hold a national scientific habilitation to Full Professorship in Engineering Geology (valid until 2024).

I am interested in the interplay among geological structure, the hydro-mechanical behaviour of geomaterials, slope instability processes on different spatial and temporal scales, and their geomorphological, geohazard and engineering aspects. To do this, I integrate engineering and structural geology, geomorphology and rock mechanics, using experimental, remote survey/monitoring (LiDAR, photogrammetry, InSAR), and numerical modelling techniques.

My main research topics include: a) mechanisms and long-term evolution of slow rock slope deformation; b) monitoring and modelling of large landslides; c) laboratory rock deformation; d) hydro-geomechanical properties of fractured media; e) rock fall modelling and protection; f) hazard and risk analysis.

I participated in several national (PRIN, FIRB, ASI-MORFEO) and international (EU-FP5, EU-FP6, EU-FP7, INTERREG) research projects. I was PI of the UNIMIB project "Structural and geomechanical characterization of poly-deformed rocks using remote techniques and 2D/3D modelling" and I am currently PI of the the 3-year project "Slow2Fast - Long-term activity, damage and collapse potential of large slow-moving landslides in rock in Lombardia" (2017-2020 - Fondazione Cariplo grant 2016-0757).

I published over 60 papers, including 28 on ISI journals (H-Index: 19 – Scopus; 24 – Google Scholar) and 30+ contributions in books or conference proceedings. I presented 70+ conference contributions.

Personal web pages:

<https://www.unimib.it/federico-agliardi>

https://www.researchgate.net/profile/Federico_Agliardi/

<http://scholar.google.com/citations?user=7KcRzoYAAAAJ&hl=en>

Education and professional qualifications

2018 National Scientific Habilitation (ASN) to Full Professorship (A4/03 – valid until 4/09/2024)

2003 Ph.D. (Earth Sciences) University of Milano, Italy

2001 Habilitation, Professional Geologist - Ordine dei Geologi della Lombardia

1999 Master degree (Geological Sciences) University of Milano, Italy

Professional Experience

Oct 2016 – Present	Associate Professor, University of Milano-Bicocca
Jun 2013 – Oct 2014	Visiting Researcher at British Geological Survey, UK (different periods)
Feb 2007 – Sep 2016	Assistant Professor, University of Milano-Bicocca
Feb 2003 – Jan 2007	Engineering Geologist, Private Consultant, Italy
Feb 2003 – Jan 2007	Contract (aggregate) Professor, University of Milano-Bicocca, Italy
Dec 1999 – Jan 2003	PhD Student, University of Milano, Italy

Research

Projects

- 2000-2001: EU INTERREG II-C “Falaises” project, Eastern Mediterranean and Latin Alps (collaborator)
- 2000-2001: COFIN 99 project “Landslides as climate change indicators since Tardiglacial” (collaborator)
- 2000-2003: EU-FP5 project “DAMOCLES - Debris-fall Assessment in MOUNTAIN Catchments for Local End-users” (UNIMIB team member)
- 2001-2003: FIRB 2001 project “Multidisciplinary approach to rockslide hazard” (team member)
- 2002-2003: PRIN 2002 project “Catastrophic landslides: characterization, monitoring and modelling for hazard assessment” (UNIMIB team member)
- 2004-2007: EU-FP6 project “LESSLOSS-Risk Mitigation for Earthquakes and Landslides” (collaborator)
- 2008-2010: ASI (Italian Space Agency) project “MORFEO - MONitoraggio e Rischio da Frana mediante dati EO” (UNIMIB team member)
- 2008: UNIMIB-FAR “Hazard and risk assessment by the development of data analysis and geological, hydrogeological and geomechanical modelling”. UNIMIB local project 2008-ATE-0315 (team member)
- 2009: UNIMIB-FAR “Hazard and risk assessment through advanced modelling techniques”. UNIMIB local project 2009-ATE-0123 (team member)
- 2009-2011: EU-FP7 project “SAFELAND - Living with landslide risk in Europe: Assessment, effects of global change, and risk management strategies”, Contract 226479 (UNIMIB team member)
- 2009-2011: EU INTERREG IV-A “MASSMOVE - Minimal standards for the compilation of hazard maps for landslides and rockfalls” (UNIMIB team member – coordination and management responsibilities)
- 2010: UNIMIB-FAR “Geohazards and risk: development and integration of new geological and geomechanical modelling techniques”. UNIMIB local project 2010-ATE-0343 (team member)
- 2011: UNIMIB-FAR “Geohazards and risk: development and integration of new geological and geomechanical modelling techniques”. UNIMIB local project 2011-ATE-0062 (team member)
- 2013-2016: PRIN 2010-11 project “Spatial-temporal forecasting of high-impact landslide in the framework of changing rainfall regimes” (UNIMIB team member)
- 2013: UNIMIB-FA “Structural and geomechanical characterization of polydeformed rocks by remote survey and 2D/3D modelling techniques”. UNIMIB local project 2013-ATE-0542 (Principal investigator)
- 2015: UNIMIB-FA “Structural and geomechanical modelling of fractured rock masses in deformed areas and related applications”. UNIMIB local project 2015-ATE-0465 (team member)
- 2016: UNIMIB-FA “Structural and geomechanical analysis of fractured media to support geohazard modelling” (team member)
- 2017-2020 (ongoing): “@RockHoRiZon - Advanced Tools for Rockfall Hazard and Risk zonation at the Regional Scale”. 2016-NAZ-0181, Fondazione Cariplo Grant 2016-0756 (team member, WP leader)
- 2017-2020 (ongoing): “Long-term activity, damage and collapse potential of large slow-moving landslides in rock in Lombardia (Slow2Fast)”. 2016-NAZ-0182, Fondazione Cariplo Grant 2016-0757 (Principal investigator)

I also took part in scientific collaborations and consulting projects with Italian (e.g. Environmental Protection agencies, National Research Council, regional authorities and municipalities) and international governmental and research institutions (British Geological Survey, Chinese Academy of Sciences, Czech Geological Survey, Geological Survey of Austria, Geological Survey of Norway, Instituto Geologico y Minero de Espana, Simon Fraser University, Université de Lausanne, University of Texas, Norwegian Geological Survey), as well as private companies (e.g. PT Freeport Indonesia, Rio Tinto) in the fields of geomechanics, slope instability and related hazards in natural and mining settings.

I actively collaborate with scientists from British Geological Survey, Université de Grenoble-Alpes, Aix-Marseille University-CEREGE, Sapienza Università di Roma, Università di Torino.

Research outputs

- 80+ publications, including 28 papers on ISI journals and over 30 contributions in other journals, books and conference proceedings
- More than 40 conference oral presentations and over 30 poster presentations

Bibliometry:

- Scopus (4 September 2018): 1844 citations (1708 excluding self citations); H-Index: 19
- Google Scholar Citations (4 September 2018): 2964 total citations; H-Index: 24

Teaching - supervising - visiting

University teaching appointments (at UNIMIB):

- 2003-2008: Geological risk assessment (MSc Geological Sciences and Geotechnologies, 5 credits)
- 2006-2008: Introduction to geoenvironmental risks (BSc Geological Sciences and Geotechnologies, 5 credits)
- 2009-2011: Engineering geomorphology and slope stability (MSc in Geological Sciences and Geotechnologies, 1 credit)
- 2009-2011: Applied numerical modelling (MSc in Geological Sciences and Geotechnologies, 2 credits)
- since 2006: Engineering geological survey and geotechnical site characterization (MSc in Geological Sciences and Geotechnologies, 6 credits)
- 2012-2015: Slope stability Lab (MSc in Geological Sciences and Geotechnologies, 4 credits)
- since 2015: Slope stability (MSc in Geological Sciences and Geotechnologies, 6 credits)
- since 2016: Geological Mapping 2 (BSc in Geological Sciences and Geotechnologies, 4 credits)

Other teaching appointments:

- 2008-2010: postgraduate UNIMIB Master course "Landuse and Water Management in Developing Countries" – Georisk module (12 hours)
- 2011: "Advanced course on landplanning in high risk areas" funded by the Italian Ministry of Environment – rockfall hazard module (12 hours), at Milan and Rome
- 2011: Short course "Alpine rock slope failures: mechanisms, controls and characterization" organized by the Czech Geological Survey and funded by the Czech Ministry for Education and the EU programme "The Investment into the Education Development, Operational Program - Education for the competitiveness, 2.3 Human sources in research and development". 6 lecture hours + field trip
- since 2012: postgraduate UNIMIB Master course "Management of water resources in the international cooperation" – Georisk module (20 hours/year)

Supervising:

- 1 PhD thesis supervised to successful completion
- 39 master theses supervised or co-supervised to successful completion
- 13 undergraduate theses supervised or co-supervised to successful completion
- 1 ongoing PhD (UNIMIB)
- 1 ongoing postdoc (UNIMIB)

Visiting:

- Jun 2013 – Oct 2014: Visiting researcher at the Rock Mechanics and Physics Laboratory of the British Geological Survey (Environmental Science Centre, Keyworth, Nottingham, UK)

Professional services

Institutional services

- Since 2008: Board Member of PhD programs in “Earth Sciences”, “Sciences” and “Chemical, Geological and Environmental Sciences” (Cycles 24 to 32) at the University of Milano-Bicocca.
- 2016-2018 (ongoing): responsible of the UNIMIB unit the “Scientific Degrees National Project” (Piano Nazionale Lauree Scientifiche – PLS) funded by the Italian Ministry of University and Research (MIUR)

Editorial services

Referee for ISI journals: Bulletin of Engineering Geology and the Environment (2), Canadian Geotechnical Journal (1), Earth Science Reviews (2), Earth Surface Processes and Landforms (3), Engineering Geology (37), Environmental Earth Sciences (1), GFT Geological Field Trips (1), Geological Society of London–Special Publications (1), Geology (1), Geomorphology (5), Journal of Geophysical Research: Earth Surface (1), Italian Journal of Geosciences (1), Landslides (7), Marine and Petroleum Geology (1), Natural Hazards and Earth System Sciences (12), Quaternary International (1), Quaternary Science Reviews (1), Rock Mechanics and Rock Engineering (2), Structural Engineering International (1), Tectonophysics (3), The Cryosphere (1).

Professional Associations

- Member, American Geophysical Union (AGU)
- Member, European Geosciences Union (EGU)
- Member, International Association of Engineering Geology and the Environment (IAEG)
- Member, Italian Geological Society (SGI)
- Member, Ordine dei Geologi della Lombardia (OGL)

Conference committee and services

- Scientific committee member: RocExs, Interdisciplinary Workshop on Rockfall protection, Innsbruck, 17-19 May 2011
- Scientific committee member: 2nd conference on Slope Tectonics, Vienna, 6 – 11 September 2011
- Organizing committee member: 1st Int. Workshop on Warning Criteria for Active Slide, Courmayeur, 10-12 June 2013
- Organizing committee member: RocExs, Interdisciplinary Workshop on Rockfall protection, Lecco, 29-31 May 2014
- Scientific committee member: 3rd conference on Slope Tectonics, Trondheim, 8–12 September 2014
- Scientific committee member: 4th Slope Tectonics conference, Kyoto University, 14–18 October 2017

Scientific sessions at international conferences

- Co-convenor: EGU General Assembly 2011, Vienna. Session NH3.8 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”
- Convenor: EGU General Assembly 2011, Vienna. Session NH3.10/GM6.2 “Rock mechanics and structural controls on hillslope processes (co-organized)”
- Co-convenor: EGU General Assembly 2011, Vienna. Session NH3.3 “Rockfalls, rockslides and rock avalanches”
- Convenor: AGU Fall Meeting 2011, San Francisco. Session NH13E “Landslide Characterisation and Forecasting: Structural Controls, Field Mapping, Remote Sensing Methodologies, Modelling, and Risk Analysis II Posters”
- Co-convenor: EGU General Assembly 2012, Vienna. Session NH3.7 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”

- Co-convenor: EGU General Assembly 2012, Vienna. Session NH3.3/GM6.3 “Rockfalls, rockslides and rock avalanches (co-organized)”
- Co-convenor: EGU General Assembly 2013, Vienna. Session GM6.1/NH3.3 “Rockfalls, rockslides and rock avalanches (co-organized)”
- Co-convenor: EGU General Assembly 2013, Vienna. Session NH3.7 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”
- Convenor: AGU Fall Meeting 2013, San Francisco. Session NH31C “Mechanisms, Vulnerability, Hazard, and Risk: From Shallow to Deep Seated Slope Deformation I”
- Co-convenor: EGU General Assembly 2014, Vienna. Session NH3.7 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”
- Co-convenor: EGU General Assembly 2014, Vienna. Session NH3.13 “Numerical modeling for the analysis of failure and deformation processes in soil and rock geostructures”
- Co-convenor: IAEG XII Congress, Torino. Session 2.3 “Characterization, monitoring and modelling of large slope instabilities and their interaction with engineering structures”
- Co-convenor: IAEG XII Congress, Torino. Session 2.7 “Deep-seated Gravitational Slope Deformations: innovative multidimensional approaches and targeted applications”
- Co-convenor: AGU Fall Meeting 2014, San Francisco. Session NH41C “Landslides and Gravitational Slope Deformation: Case Studies and Their Mechanism”
- Co-convenor: EGU General Assembly 2015, Vienna. Session NH3.7 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”
- Convenor: EGU General Assembly 2015, Vienna. Session NH3.14 “Characterization of fractured rock masses for hydro-mechanical and geohazard applications”
- Co-convenor: EGU General Assembly 2016, Vienna. Session NH3.5 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”
- Convenor: EGU General Assembly 2016, Vienna. Session NH3.10/GM8.2 “Hydro-geomechanical aspects of fractured bedrock systems: geotechnical, geomorphological and geohazard implications”
- Co-convenor: EGU General Assembly 2017, Vienna. Session EMRP1.4/GD7.6/NH3.17/SM6.3 “Rock physics and geomechanical characterisation of rocks from micro to macroscale: the role of anisotropy and hydro-mechanical coupling (co-organized)”.
- Co-convenor: EGU General Assembly 2017, Vienna. Session NH3.5 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling”.
- Co-convenor: EGU General Assembly 2018, Vienna. Session EMRP1.3/GMPV3.5/NH3.17/SM 2.04/TS2.4 “Rock Physics and geomechanical characterisation of rocks from the micro to macroscale: fabric, fractures and fluids (co-organized)”.
- Co-convenor: EGU General Assembly 2018, Vienna 8-13 April 2018. Session NH3.5/GI3.18 “Large slope instabilities: characterisation, dating, triggering, monitoring and modelling (Co-sponsored by JpGU) (co-organized)”.

Invited talks and seminars

- Invited talk: “Rockfall hazard models: the STONE code”. Convegno La prevenzione del Rischio Idrogeologico attraverso la conoscenza del Territorio. Milano, 26-27 Sep 2001
- Invited lecture: “Analysis of monitoring data”. Course "NH.06 – Monitoring techniques applied to slope stability” Earth Science Institute IST-SUPSI, Canobbio (Switzerland), 23 Feb 2006
- Invited lecture: “Rockfall hazard assessment: probability, intensity, model reliability and scenario”. Université Européenne d' Été sur les Risques Naturels 2007, Courmayeur, 11 Sep 2007
- Invited talk: “Pericolosità e rischio per caduta massi in Friuli Venezia Giulia: il progetto Interreg MASSMOVE”. Convegno: Il dissesto idrogeologico in Friuli Venezia Giulia: conoscenza e prevenzione efficace. Tolmezzo (UD), 27 Sep 2010

- Keynote: "Local to orogen-scale controls of geological structure on deep-seated gravitational slope deformations". 2nd Conference on Slope Tectonics, Vienna, Austria, 7 Sep 2011
- Invited talk: "Rockfall case studies in Friuli Venezia Giulia". MASSMOVE, Minimal standards for the compilation of hazard maps of landslides and rock fall, Final conference, 20 Sep 2011, Majano, Udine
- Invited Lectures: "Alpine rock slope failures: mechanisms, controls and characterization". Czech Geological Survey, Educational Project Geological Field Trip and Workshop, Matri, 17-20 Jun 2012
- Invited seminar: "Instabilità di grandi versanti in roccia nelle Alpi: distribuzione, meccanismi evolutivi e pericolosità". Università degli Studi di Padova, Dipartimento di Geoscienze, 31 Oct 2013
- Keynote: "Giant, slow rock slope deformations in the European Alps: controls, geomorphic impacts and geohazard implications". The Future of the Italian Geosciences - The Italian Geosciences of the Future. 87° Congresso della Società Geologica Italiana e 90° GSI-SIMP conference, 12 Sep 2014
- Invited seminar: "Long-term conditioning of large rock slope instabilities in the Central Alps". ISTerre, Institut des Sciences de la Terre, Université de Grenoble, 23 Mar 2015
- Invited seminar: "Controls, long-term evolution and impact of slow rock slope deformations in the Alps". ETHZ Swiss Federal Institute of Technology Zurich, Earth Sciences Institute, 28 Apr 2015
- Invited talk: "The Ruinon rockslide". Convegno Grandi frane alpine: 1987–2017 - La frana della Val Pola. Bormio, 21 Lug 2017
- Invited talk: "Evoluzione e potenziale di collasso di grandi frane lente in ambiente alpino-". Convegno "La frana di Piuro del 1618 e le grandi frane alpine". Piuro (SO), 24-25 Aug 2018.

Oral presentations at international conferences

- 1) Crosta G.B., Zanchi A., Agliardi F. "Deep-seated slope deformations in active tectonics areas: the Mt. Watles sackung (Eastern Central Alps, Italy)". EGS XXVI General Assembly, Nice, France, Session NH7.03, 27 Mar 2001
- 2) Agliardi F., Crosta G.B. "How to obtain alert velocity thresholds for large rockslides/rock avalanches". EGS XXVI General Assembly, Nice, France, Session NH7.01, 28 Mar 2001
- 3) Agliardi F., Crosta G.B. "High resolution 3D numerical modelling of rockfalls". EGS XXVII General Assembly, Nice, France, Session NH3.02, 25 Apr 2002
- 4) Agliardi F., Crosta G.B., Orombelli G., Ravazzi C., Zanchi A. – "The Mt. Watles sackung (Val Venosta, BZ); morpho-structural, stratigraphic and geochronological investigations". Final meeting COFIN 99 "Landslides as climate change indicators since the Lateglacial". Modena, 5 Nov 2001
- 5) Agliardi F., Ambrosi C., Crosta G.B., Zanchi A., Cocco S. "Tectonic controls on large deep seated slope deformations and their interaction with man-made structures: the Cima di Mandriole sackung (Central Italian Alps)". Congress Slope-Tectonics, Lausanne, 15 Feb 2008
- 6) Crosta G.B., Zanchi A., Agliardi F., Ambrosi C. "Tectonic vs. gravitational morphostructures in Upper Valtellina (Central Alps, Italy)". Congress Slope-Tectonics, Lausanne, 15 Feb 2008
- 7) Crosta G.B., Agliardi F., Frattini P., Zanchi A. "Alpine inventory of Deep-Seated Gravitational Slope Deformations". EGU General Assembly 2008, Session NH4.7, Vienna, 17 Apr 2008
- 8) Agliardi F., Crosta G.B., Frattini P. "Integrating rockfall risk scenario assessment and countermeasure design by 3D modelling techniques". Interdisciplinary Workshop on Rockfall Protection 2008, Morschach, Switzerland, 25 Jun 2008
- 9) Agliardi F., Crosta G.B., Frattini P. "Analisi quantitativa del rischio da caduta massi tramite tecniche di modellazione numerica 3D". 3° Congresso Nazionale AIGA, Centro di GeoTecnologie, Università degli Studi di Siena, San Giovanni Valdarno (AR), 26 Feb 2009
- 10) G.B. Crosta, F. Agliardi, N. Fusi, S. Zanchetta, V. Barberini, M. Laini, A. Pola, E. De Ponti "Rock fabric controls on the failure mode of strongly deformed gneiss". EUROCK 2010, Rock Mechanics in Civil and Environmental Engineering, EPFL, Lausanne, Switzerland, 15 Jun 2010

- 11) Agliardi, F, Crosta, GB, Laini, M, Mannucci, G, Ballini, A, La Rocca, L, Frattini, P “Modelling geological and morpho-climatic controls on large alpine rockslides: the Spriana landslide”. X Giornata Mondiale dell'Acqua - Frane e dissesto idrogeologico: consuntivo. Accademia dei Lincei, Roma, 22 Mar 2010
- 12) Agliardi, F., Frattini, P., Crosta, G.B., Secondi M. “Prodotti del S/S UNIMIB: l’esperienza applicativa in Lombardia. L'Osservazione della Terra per la protezione civile dalle frane”. Final Workshop of Project ASI “MORFEO - MONitoraggio e Rischio da Frana mediante dati EO”. DPC, Roma, 8-9 Mar 2011
- 13) Agliardi, F., Crosta, GB., Zanchetta, S., Secondi, M., Barberini, V., Fusi N., De Ponti E. “Fabric controls on the failure mode of strongly deformed metamorphic rocks: investigation, modelling, and impact on rock-slope stability”. EGU General Assembly 2011, Session NH3.10/GM6.2, Vienna, 8 Apr 2011
- 14) Agliardi, F., Crosta, G.B., Rivolta, C., Valle, C., Meloni, F. “From kink band localization to large-scale slope failure at the Mt. Gorsa porphyry quarry (Trentino, Italy)”. 2nd Conference on Slope Tectonics, Vienna, Austria, 6 Set 2011
- 15) Agliardi, F., Crosta, G.B., Sosio, R., Rivolta, C., Mannucci, G. “In situ and remote long term, real-time monitoring of a large alpine rock slide”. Second World Landslide Forum, F.A.O. - Rome, 3-8 Oct 2011
- 16) Agliardi, F, Crosta, GB, Frattini, P, Malusà, MG “Impact of deep-seated gravitational slope deformations on topographic relief evolution in the European Alps”. AGU Fall Meeting 2011, Session EP43, San Francisco, 8 Dic 2011
- 17) Agliardi, F, Crosta, GB, Meloni, F, Valle, C, Rivolta, C, Leva, D “Kink zone localization, structurally-controlled instability, and large-scale rock slope failure at the Mt. Gorsa porphyry quarry (Trentino, Italy)”. EGU General Assembly 2012, Session NH3.7, Vienna, 26 Apr 2012
- 18) Agliardi, F., Zanchetta, S., Crosta, G.B., Barberini, V., Fusi, N., De Ponti, E. “Fabric Controls on the Failure Mode of Strongly Deformed Metamorphic Rocks with Multiple Anisotropies”. Abstract T14C-06 presented at 2012 Fall Meeting, AGU, San Francisco, California, 3-7 Dec 2012
- 19) Agliardi, F., Meloni, F., Rivolta, C., Crosta, G.B. “Improved understanding of slope failure in porphyry rocks by integrated rock mass characterisation, remote sensing and numerical modelling”. Abstract NH14A-05 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec 2013
- 20) Agliardi, F., Crosta, G.B. “3D modelling support to the design of massive rockfall protection structures. 5th Interdisciplinary Workshop on Rockfall Protection”. RocExs 2014, Lecco, Polo Territoriale di Lecco del Politecnico di Milano, 30 May 2014
- 21) Agliardi, F., Vinciguerra, S., Dobbs, M.R., Zanchetta, S. “Role of folded anisotropic fabric in the failure mode of gneiss: new insights from mechanical, microseismic and microstructural laboratory data”. EGU General Assembly 2015, Sessione EMRP1.2, Vienna, 14 Apr 2015
- 22) Agliardi, F., Vinciguerra, S., Dobbs, M., Zanchetta, S. “Contrasting failure modes of folded gneiss revealed by mechanical, microseismic and microstructural data”. 11th EURO-conference on Rock Physics and Geomechanics 2015, Session 5, Ambleside, Lake District, UK, 7 Sep 2015
- 23) Riva F., Agliardi, F., Amitrano, D., Crosta, G.B. “Damage-based long term modelling of a large alpine rock slope”. In landslides and engineered slopes. Experience, theory and practice. 12th international symposium on landslides, Napoli, Italy, 16 Jun 2016
- 24) Agliardi, F., Scuderi, M.M., Collettini, C. “Laboratory simulation of rockslide creep and hydro-mechanical coupling”. EGU General Assembly 2017, Session NH3.11/GM8.4/SSS2.25, Vienna, 28 Apr 2017
- 25) Agliardi, F., Riva, F., Crosta, G., Amitrano, D. “Damage-based time-dependent simulation of the progressive failure of large alpine rock slopes”. Progressive Rock Failure conference, Ascona, 8 Jun 2017.
- 26) Agliardi, F., Asnaghi, R., Paternoster, R., Frattini, P., Castellanza, R., Zanchetta, S., Crosta, G.B. “Influence of non-persistent slope-scale fractures on DSGSD mechanisms and activity”. 4th Slope Tectonics conference, Kyoto, 14 Oct 2017.

- 27) Agliardi, F., Riva, Cola, G., Spreafico, M.C., Bourlès, D., Braucher, R., Crippa, C., Rivolta, C., Crosta, G. "DSGSD to rockslide transition at the Saline ridge revealed by dating, remote sensing and time-dependent modelling". EGU General Assembly 2018, Session NH3.11, Vienna, 10 Apr 2018.

Publications

Journal papers (ISI)

- 1) Riva, F., Agliardi, F., Amitrano, D. & Crosta, G. B. (2018). Damage-based time-dependent modelling of paraglacial to postglacial progressive failure of large rock slopes. *Journal of Geophysical Research: Earth Surface*, 122 (1), 124-141.
- 2) Agliardi, F., Dobbs, M. R., Zanchetta, S., & Vinciguerra, S. (2017). Folded fabric tunes rock deformation and failure mode in the upper crust. *Scientific Reports*, 7(1), 15290.
- 3) Crosta, G. B., Agliardi, F., Rivolta, C., Alberti, S., Dei Cas, L. (2017). Long-term evolution and early warning strategies for complex rockslides by real-time monitoring. *Landslides*, 14, 5, 1615–1632.
- 4) De Franco, R., Caielli, G., Villa, A., Agliardi, F., Franchino, F. (2016). Ground-penetrating radar refraction imaging with stacked refraction convolution section method. *Geophysics*, 81(5), H33-H45.
- 5) Agliardi, F., Sapigni, M., & Crosta, G. B. (2016). Rock Mass Characterization by High-Resolution Sonic and GSI Borehole Logging. *Rock Mechanics and Rock Engineering*, 49(11), 4303-4318.
- 6) Cloutier, C., Agliardi, F., Crosta, G.B., Frattini, P., Froese, C., Jaboyedoff, M., Locat, J., Michoud, C., Marui, H. (2015). The First International Workshop on Warning Criteria for Active Slides: technical issues, problems and solutions for managing early warning systems. *Landslides*, 12, 205-212.
- 7) Agliardi, F., Zanchetta, S., Crosta, G.B. (2014). Fabric controls on the brittle failure of folded gneiss and schist. *Tectonophysics*, 637, 150-162.
- 8) Wang, X., Frattini, P., Crosta, G.B., Zhang, L., Agliardi, F., Lari, S., Yang, Z. (2014). Uncertainty assessment in quantitative rockfall risk assessment. *Landslides*, 11, 4, 711-722.
- 9) Crosta, G., di Prisco, C., Frattini, P., Frigerio, G., Castellanza, R., Agliardi, F. (2014). Chasing a complete understanding of the triggering mechanisms of a large rapidly evolving rockslide. *Landslides* 11(5), 747-764.
- 10) Corominas, J., van Westen, C., Frattini, P., Cascini, L., Malet, J.-P., Fotopoulou, S., Catani, F., Van Den Eeckhaut, M., Mavrouli, O., Agliardi, F., Pitilakis, K., Winter, M.G., Pastor, M., Ferlisi, S., Tofani, V., Hervás, J., Smith, J.T. (2014). Recommendations for the quantitative analysis of landslide risk. *Bulletin of Engineering Geology and the Environment*, 73, 2, 209-263.
- 11) Agliardi, F., Crosta, G.B., Meloni, F., Valle, C., Rivolta, C. (2013). Structurally-controlled instability, damage and slope failure in a porphyry rock mass. *Tectonophysics*, 605, 34-47.
- 12) Agliardi, F., Crosta, G.B., Frattini, P., Malusà, M.G. (2013). Giant non-catastrophic landslides and the long-term exhumation of the European Alps. *Earth and Planetary Science Letters*, 365, 263-274.
- 13) Crosta, G.B., Frattini, P., Agliardi, F. (2013). Deep seated gravitational slope deformations in the European Alps. *Tectonophysics*, 605, 13-33.
- 14) Wang, X., Zhang, L., Wang, S., Agliardi, F., Frattini, P., Crosta, G., Yang, Z. (2012). Field investigation and rockfall hazard zonation at the Shijing Mountains Sutra caves cultural heritage (China). *Environmental Earth Sciences*, 66(7), 1897-1908.
- 15) Volkwein, A., Schellenberg, K., Labiouse, V., Agliardi, F., Berger, F., Bourrier, F., Dorren L.K.A, Gerber, W., and Jaboyedoff, M. (2011). Rockfall characterization and structural protection - a review. *Natural Hazards and Earth System Sciences*, 11, 2617-2651.
- 16) Norini, G., L. Capra, G. Groppelli, F. Agliardi, A. Pola, and A. Cortes (2010), Structural architecture of the Colima Volcanic Complex, *Journal of Geophysical Research*, 115, B12209.
- 17) Agliardi, F., Crosta, G.B., Frattini, P. (2009). Integrating rockfall risk assessment and countermeasure design by 3D modelling techniques. *Natural Hazards and Earth System Sciences*, 9, 1059–1073.

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