

Maddalena Marchelli, PhD

Marie Curie Researcher

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Born in Genova 26/10/1989
Corso L. Einaudi 41
10129 Torino (To)

Education

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| 2008-2011 | Bachelor in Building Engineering
Politecnico di Torino
Mark: 110/110 <i>cum laude</i> |
| 2011-2013 | Master in Building Engineering,
Politecnico di Torino
Mark: 110/110 <i>cum laude</i> |
| 2014-2018 | PhD on Environmental Engineering
Politecnico di Torino
Thesis: <i>Debris flow interaction with open rigid barriers: A DEM-LBM approach for trapping efficiency and impact force analysis</i> |

Academic and working experience

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| 2013-2014 | Building Engineer
Studio Archingeo, Castellazzo Bormida (AL) |
| 2014-2015 | Research scholarship
Department of Structural, Geotechnical and Building Engineering, Politecnico di Torino |
| 2014-2018 | PhD student
Environmental Engineering, Politecnico di Torino |
| 2018-2023 | PostDoctoral fellow (PostDoc)
Department of Environment, Land and Infrastructure Engineering, Politecnico di Torino |
| 2023 | Assistant Professor with time contract
Department of Structural, Geotechnical and Building Engineering, Politecnico di Torino |
| 2023 – at present | Marie Curie Researcher (HORIZON-MSCA-2022-PF-01) project RIDETHERISK (GA 101103401)
Department of Environment, Land and Infrastructure Engineering, Politecnico di Torino |

Research topics

1. Rockfall risk analysis
 - Stability analysis of rock slopes, also using data appropriately interpreted by monitoring instrumentation.
 - Study of the propagation of rockfall phenomena and comparison of analysis methodologies using different types of software.
 - Analysis of the fragmentation process of blocks during collapse.
 - Design of new risk assessment methodologies for infrastructures and inhabited areas.

- Design of a procedure for assessing the risk of rockfalls in the presence of different types of risk elements.
 - Application to case studies: slope insisting on the entrance to the service tunnel of the Turin-Lyon railway base tunnel, upstream portion of the Valle d'Aosta SS 26 road in the municipalities of Chambave, Chatillon and Saint-Denis, farm road in the municipality of Gressoney-La-Trinité.
2. Rockfall protection works: design and analysis of the existing protection works
- Drapery meshed (simple and reinforced drapery meshes): development of a new methodology for the analysis and structural verification of new structures. Development of a procedure for assessing the efficiency of existing protective structures. The method is based on the assessment of the damage status associated with the characteristics/potential damage of each element of each structure and the importance of these characteristics in the overall assessment of the conservation status of the structure.
 - Rockfall barriers: design of a procedure for assessing the efficiency of existing protection works. Study of the actual probability of failure of a protective structure considering the variability over time and the uncertainties associated with the phenomenon of collapse. Design of a new procedure for the design of rockfall barriers based on a reliability-based approach.
 - Rockfall embankments: study of dynamic behaviour and stability following impact.
3. Interaction phenomena between debris flow and protective structures
- Numerical modelling of granular flows, both dry and fluid coupled, and of the impact with rigid mitigation structures. The dynamics of the interaction was investigated with a two-phase and three-dimensional approach. A numerical code in C++ was implemented and simulations of debris flow events were carried out using a DEM and LBM approach. The research aimed to identify design criteria and to improve the design of open hard protective structures, such as open rigid barriers, with a focus on the phenomena of sediment retention and filtering efficiency as a function of characteristic sediment size.

Scientific activity

Participation to National and International research projects

- Research project "Realizzazione scenari di rischio per crolli di roccia" financed by Regione Autonoma Valle d'Aosta at the Department of Structural, Geotechnical and Building Engineering (DISEG) of the Politecnico di Torino, head of the Operational Unit: Prof. C. Scavia, from 16/05/2014 to 06/05/2015;
- Research activities related to the study and modelling of the interaction between debris flows and passive risk mitigation work of rigid type, research coordinator: Prof. M. Pirulli, within the framework of the PhD in Environmental Engineering (XXX cycle) of Politecnico di Torino, from 01/11/2014 to 5/03/2018.
- Research project " MHYMESIS "Nuove frontiere per l'analisi previsionale di fenomeni alluvionali con elevata concentrazione di sedimenti: uno strumento numerico di seconda generazione per la salvaguardia territoriale montana " financed by Fondazione Caritro (Lead partner: Department of Civil, Environmental and Mechanical Engineering of Univeristà di Trento (DICAM). Partners: Department of Structural, Geotechnical and Building Engineering (DISEG) of Politecnico di Torino, Servizio Bacini Montani della Provincia Autonoma di Trento, Dipartimento programmazione, difesa del suolo e risorse idriche dell'Assessorato Opere Pubbliche, Difesa del Suolo e Edilizia residenziale Pubblica della Regione Autonoma Valle d'Aosta, Trilogis S.r.l.), research coordinator: Prof. G. Rosatti, from 03/10/2015 to 02/02/2018
- Research activity in the group coordinated by Prof. S. Pudasaini, at the Rheinische Universitat Bonn, within the framework of an ERASMUS+ grant from the Politecnico di Torino, from 01/02/2016 to 30/05/2016
- Research activities of the Idrostudi research centre (Trieste) in collaboration with the group coordinated by Ing. Leonardi, from 01/07/2016 o 31/08/2017;
- Competitive project "RED: RISK EVALUATION DASHBOARD" co-financed by the European Regional Development Fund and the European Social Fund - Investment Programme for Growth and Employment 2014/20 (ERDF and ESF) (lead partner: Engineering Spa, partners: Department of Environmental, Land and Infrastructure Engineering (DIATI), Department of Structural, Building and Geotechnical Engineering (DISEG) of Politecnico di Torino, Fondazione Montagna Sicura, Ise-Net S.r.l., GMH S.r.l.), from 15/07/2016 to 14/07/2018;

- Participation in consultancy activities related to "Analisi delle documentazioni tecniche relative al controllo ed al monitoraggio dei blocchi presenti sul versante, analisi critica delle risultanze sperimentali e formulazione di suggerimenti in relazione alla gestione strumentale del sistema di monitoraggio" on behalf of Tunnel Euralpin Lyon Turin (TELT) at the Department of Environmental, Land and Infrastructure Engineering (DIATI) Politecnico di Torino, Project leader: Prof. D. Peila, from 03/07/2018 to 02/07/2020
- Research project "Acquisizione di dati territoriali ad alta risoluzione in ambiente complesso mediante l'integrazione di tecniche/strumenti metodi innovativi in un approccio multirisoluzione e multiscala" funded by the Unione dei Comuni del Lago Maggiore to the Department of Environmental, Land and Infrastructure Engineering (DIATI) and the Department of Architecture and Design (DAD) of Politecnico di Torino, scientific head of the project: Prof. A. Lingua, from 23/07/2018 to 22/07/2019
- Research project "Studio sui versanti linea ferroviaria Germagnano - Ceres" financed by the Gruppo Torino Trasporti GTT to Department of Environmental, Land and Infrastructure Engineering (DIATI) of Politecnico di Torino, scientific coordinator of the project: Prof. D. Peila, from 03/06/2019 to 02/06/2020
- Research project "Sviluppo di una metodologia per la valutazione del rischio su una strada podereale (loc. Netscho) sul comune di Gressoney-La-Trinité soggetta a rischio frana ai sensi della LR 11/98 Art. 35" financed by the Municipality of Gressoney la Trinité to the Department of Structural, Geotechnical and Building Engineering (DISEG) of Politecnico di Torino and to the Interdepartmental Centre for Safety of InfraStructures and Constructions (SISCON), scientific responsible for the project: Prof. V. De Biagi, from 09/08/2019 to 15/09/2019
- Research project "Sviluppo di una metodologia per la valutazione del rischio su differenti tipologie di elementi esposti al pericolo di caduta massi" financed by Regione Autonoma Valle d'Aosta to the Department of Structural, Geotechnical and Building Engineering (DISEG) of Politecnico di Torino and to the Interdepartmental Centre for Safety of InfraStructures and Constructions (SISCON), and the Rockfall Protection Engineering Laboratory of the Department of Environmental, Land and Infrastructure Engineering (DIATI) of Politecnico di Torino, scientific coordinator of the project: Prof. V. De Biagi, from 01/12/2019 to 29/02/2020
- Research project "Studio di versanti rocciosi in relazione al problema di caduta massi con approfondimento dei possibili distacchi e relative traiettorie di rotolamento" financed by Lombardi Srl to the Department of Environmental, Land and Infrastructure Engineering (DIATI) of Politecnico di Torino, scientific responsible for the project: Prof. D. Peila, from 17/01/2020 to 16/09/2020
- Research project "Studio di versanti rocciosi in relazione al problema di caduta massi con approfondimento dei possibili distacchi e relative traiettorie di rotolamento confrontando anche modelli bidimensionali e tridimensionali" financed by Lombardi Srl to the Department of Environmental, Land and Infrastructure Engineering (DIATI) of Politecnico di Torino, scientific responsible for the project: Prof. D. Peila, from 06/07/2021 to 05/10/2021
- Competitive project "Sviluppo di studi e ricerche dedicate agli aspetti di caduta di massi ed alle connesse opere di protezione territoriale nell'ambito del WP 3 (Creazione di una rete di siti pilota transfrontalieri) del progetto ALCOTRA RISK-ACT (n. 4980) "Azioni esemplari di resilienza dei territori transfrontalieri per far fronte ai rischi naturali in montagna", partner: Department of Environmental, Land and Infrastructure Engineering (DIATI) Politecnico di Torino, Regione Autonoma Valle d'Aosta, scientific responsible: Prof. D. Peila, from 01/01/2021 to 30/06/2022
- National research project "PERSEIDI" financed by Incofil Tech Srl to DIATI - POLITO (scientific responsible: Prof. D. Peila)

Guest-editor of the Special Issue "Rock Fall Protection for Surface Mining" della rivista Open Access Geosciences, MDPI, indexed Scopus and WOS, Journal rank Q1

Reviewer of the following journals: "Geosciences" edited by MDPI (Journal rank Q1), "Energies" edited by MDPI (Journal rank Q2), "GEAM" edited by Patron (Journal rank Q4), "Geomatics, Natural Hazards and Risk" edited by Taylor & Francis (Journal rank Q1), "Sustainability" edited by MDPI (Journal rank Q1), "Remote Sensing" edited by MDPI (Journal rank Q1), "Applied Sciences" edited by MDPI (Journal rank Q2)

Participation to the editorial committee of GEAM. Geingegneria Ambientale e Mineraria journal edited by Patron Editore, since 01/05/2020 (ongoing activity).

Awards and Prizes

- Winner of the 2014 Optime prize, an award for merit in the study promoted by the "Unione Industriale di Torino" (Industrial Union of Turin), for the quality of the research and the MSc thesis.

- Winner of the 'ERASMUS+ Training' grant from POLITO to carry out research activities at the Rheinische Universität Bonn (2016).
- Winner of the prize for high quality publications, promoted by the Georisorse e Ambiente Association in collaboration and with the support of the Department of Environmental, Land and Infrastructure Engineering (DIATI), awarded by assessing research results at the highest scientific level in high impact journals
- Winner of the 'ERASMUS+ Staff Training' grant from POLITO to carry out research activities at the University of Vigo (2022).
- Winner of the MSCA Postdoctoral Fellowship HORIZON-MSCA-2022-PF-01 with the Project 101103401 RIDETHERISK (Beneficiary Institution: Politecnico di Torino, Associated partner for the global mobility: University of Newcastle, Australia)

Affiliations

- Member of Association of Geohazard Professionals (AGHP)
- Promoter and co-chair of the "Geosynthetics for Geohazard Mitigation Committee" (since its origin in 2021) of the Association of Geohazard Professionals (AGHP)
- Member of the "Associazione Georisorse e Ambiente" GEAM (Georisources and Environment Association)
- Member of SISCON (Safety for InfraStructures and CONstructions), the Interdepartmental Center of the Politecnico di Torino for the applied research on infrastructures

Conference activities

Participation to National and International conferences with lecture

1. International conference "12th International Symposium on Landslides", Napoli, from 12/06/2016 to 19/06/2016;
2. National conference "Incontro Annuale dei Ricercatori di Geotecnica IARG 2017", Matera, from 05/07/2017 to 07/07/2017;
3. International conference "12th International Symposium on Landslides", Napoli, from 12/06/2016 to 19/06/2016;
4. International conference "PARTICLES 2017 V International Conference on Particle-Based Methods", Hannover, Germania, from 26/09/2017 to 28/09/2017;
5. International conference "Ancoraggi precompressi, durabilità eterna?", Manno, on 02/10/2018;
6. International conference "Eurock 2021", Torino, from 21/09/2021 to 24/09/2021;
7. International conference "Rock Slope Stability 2021", Chambéry, Francia, from 17/11/2021 to 18/11/2021
8. International conference: RocExs 2022, 7th Interdisciplinary Workshop on Rockfall Protection, online, from 27/06/2022 to 30/06/2022
9. International conference "SEMC 2022: the Eighth international conference on Structural Engineering", Mechanics and Computation, Cape Town, from 5/09/2022 to 07/09/2022
10. International conference "3rd JTC1 Workshop on Impact of Global Changes on Landslide Hazard and Risk", Oslo, from 07/06/2023 to 10/06/2023
11. International conference "DFHM 8: 8th International Conference on Debris Flow Hazard Mitigation", Turin, from 26/06/2023 to 29/06/2026
12. International conference "EMI (Engineering Mechanics Institute) 2023", Palermo, from 27/08/2023 to 30/08/2023
13. International conference "6th World Landslides Forum", Florence, from 14/11/2023 to 17/11/2023

Participation to National and International conferences with **INVITED** lecture

1. National conference "Contributo dell'ingegneria naturalistica per la stabilità dei versanti collinari", Asti, on 24/05/2014
2. Summer School: "RED - Risk Evaluation Dashboard Summer School 2018", Pont-Saint-Martin, from 25/06/2018 to 27/06/2018
3. International Summer School Internazionale "Transitional Morphologies" Sestriere, 11/07/2018
4. National conference "Innovazioni nel settore delle opere paramassi: where are we going?" (Innovations in the rockfall protection sector: where are we going?), 12/07/2019, Turin, Italy.

5. International Conference GeoAlp WinterCup 2022: Feasibility, design, construction, monitoring and maintenance of structural works and infrastructural works in mountain areas, 31/03-02/04/2022 Bözén, Italy.
6. International Conference “Barriere paramassi: una protezione durevole?” 01/12/2022, Turin, Italy.

Organisation of national and international conferences (Scientific and Organizing committee)

- National conference “Innovazioni nel settore delle opere paramassi: where are we going?” (Innovations in the rockfall protection sector: where are we going?), 12/07/2019, Turin, Italy.
- International Conference GeoAlp WinterCup 2022: Feasibility, design, construction, monitoring and maintenance of structural works and infrastructural works in mountain areas, 31/03-02/04/2022 Bözén, Italy.
- International Conference “Barriere paramassi: una protezione durevole?” 01/12/2022, Turin, Italy.
- National conference “Barriere paramassi. Una protezione durevole?” (01/12/2022), 12/07/2019, Turin, Italy.

Teaching activities

Teaching activities in MSc courses

- Lecturer in the course “Consolidamento di rocce e terreni” (now “Ground Improvement Engineering”) (Prof. D. Peila), Degree in Civil and Environmental Engineering, Politecnico di Torino, starting from A.Y. 2019/2020;
- Lecturer in the course “Landslides and slope engineering” (Prof. C. Deangeli), Degree in Environmental and Land Engineering, Politecnico di Torino, starting from A.Y. 2019/2020;

Teaching activities in PhD courses

- Lecturer in the course “Rockfall protection techniques” (Prof. D. Peila), PhD in Civil and Environmental Engineering, Scuola di Dottorato, Politecnico di Torino, starting from A.Y. 2017/2018;

Teaching activities in Masters

- Lecturer in the course “Tunnel supports”, II Level Master in Tunneling and Tunnel Boring Machines, Scuola Master, Politecnico di Torino, in A.Y. 2019/2020;
- Lecturer in the course “Infrastruttura stradale: principali opere d'arte e rischi a cui sono esposte”, II Level Master in Ingegneria E Gestione Integrata Delle Reti Autostradali, in A.Y. 2021/2022 and 2022/2023
- Lecturer in the course “Fenomeni franosi”, II Level Master in Progettazione Sostenibile Di Opere Geotecniche E Gallerie - Torino, in A.Y. 2022/2023

MSc theses and PhD supervision

1. Master of Science: co-tutor of n. 13 theses at Politecnico di Torino;
2. Co-tutor of 2 PhD student in Civil & Environmental Engineering at Politecnico di Torino

Publications

MSc Thesis

Marchelli M. (2013) Verifica della stabilità di opere in legname, Politecnico di Torino. Published online at www.regione.piemonte.it/ambiente/tutela_amb/documentazione.htm

PhD Thesis

Marchelli, M. (2018) Debris flow interaction with open rigid barriers: A DEM-LBM approach for trapping efficiency and impact force analysis, PhD Thesis, Politecnico di Torino.

Scientific papers on International journals

1. Kiakojour, F., De Biagi, V., Marchelli, M., & Chiaia, B. (2024). A conceptual note on the definition of initial failure in progressive collapse scenarios. Structures, Vol. 60, p. 105921

2. Vigna, S., Marchelli, M., De Biagi, V., & Peila, D. (2023). Numerical Simulation of Rockfall Protection Embankments in Natural Soil. *Geosciences*, 13(12), 368.
3. Marchelli, M., Coltrinari, G., Alfaro Degan, G., Peila, D. (2023). Towards a procedure to manage safety on construction sites of rockfall protective measures. *Safety Sciences*, 168, 106307
4. Marchelli, M., Peila, D., & Giacomini, A. (2023). Rockfall in open pit mines: management of the pit geometry and protection measures design. *International Journal of Rock Mechanics and Mining Sciences*, 170, 105551.
5. Marchelli, M., Pol, A., Gabrieli, F., Peila, D. (2023). Towards a hybrid design approach of anchored drapery systems. *Geosciences*, 13(5), 147
6. Marchelli, M. (Accepted). Rockfall barriers. A durable protection? Conference 01/12/2022. *GEAM Geingegneria Ambientale e Mineraria*.
7. Marchelli, M. (2022). Multiple lines of rockfall net fences: a design proposal of the system. *Rock Mechanics and Rock Engineering*, 55(12), 7503-7515. DOI: 10.1007/s00603-022-03041-0
8. Deangeli, C., Marchelli, M. (2022) Combined Effect of Pore Water Overpressure, Far-Field Stresses, and Strength Parameters in Wellbore Stability. *FRONTIERS IN EARTH SCIENCE*, vol.10, pp. 1-21. DOI: 10.3389/feart.2022.860818
9. Marchelli, M., Paganone, M., Bertolo, D., De Biagi, V., Peila, D., Vigna, S. (2022). A tool for monitoring rockfall protection works and plan the maintenance: the case of the Autonomous Region of Valle d'Aosta. *GEAM Geingegneria Ambientale e Mineraria*. DOI: 10.19199/2022.166.1121-9041.033
10. Marchelli, M. (2022). A design method for double line of rockfall net fences in the framework of probabilistic trajectory analyses. *GEAM Geingegneria Ambientale e Mineraria*, DOI: 10.19199/2022.166.1121-9041.019
11. De Biagi, V., Marchelli, M. (2022). Quantitative rockfall physical risk on settlements: an example. *GEAM Geingegneria Ambientale e Mineraria*. DOI: 10.19199/2022.166.1121-9041.05
12. Marchelli, M., Deangeli, C. (2022) Towards a codified design procedure for rockfall reinforced earth embankments. *GEAM. GEOINGEGNERIA AMBIENTALE E MINERARIA*, vol.165, pp. 50-59
13. Marchelli, M., De Biagi, V., Bertolo, D., Paganone, M., Peila, D. (2021) A mixed quantitative approach to evaluate rockfall risk and the maximum allowable traffic on road infrastructure. *GEORISK*, vol., pp. 1-11. DOI: 10.1080/17499518.2021.2010097
14. Marchelli, M., Giacchetti, G. (2021) Reinforced Drapery Meshes: A Design Method Accounting for Retaining Ropes Contribution. *APPLIED SCIENCES*, vol.11, pp. 11176. DOI: 10.3390/app11231176
15. Marchelli, M., De Biagi, V., Peila, D. (2021) Reliability-based design of rockfall passive systems height. *INTERNATIONAL JOURNAL OF ROCK MECHANICS AND MINING SCIENCES*, vol.139, pp. 104664. DOI: 10.1016/j.ijrmms.2021.104664
16. Marchelli, M., Leonardi, A., Pirulli, M., Scavia, C. (2020) On the efficiency of slit-check dams in retaining granular flows. *GEOTECHNIQUE*, vol.70, pp. 226-227. DOI: 10.1680/jgeot.18.P.044
17. Marchelli, M. (2020) Una procedura speditiva per la valutazione dello stato di conservazione delle barriere paramassi a rete. *GEAM. GEOINGEGNERIA AMBIENTALE E MINERARIA*, vol.160, pp. 24-35. DOI: 10.19199/2020.2.1121-9041.024
18. Scavia, C., Barbero, M., Castelli, M., Marchelli, M., Peila, D., Torsello, G., Vallero, G. (2020) Evaluating Rockfall Risk: Some Critical Aspects. *GEOSCIENCES*, vol.10, pp. 1-30. DOI: 10.3390/geosciences10030098
19. De Biagi, V., Marchelli, M., Peila, D. (2020) Reliability analysis and partial safety factors approach for rockfall protection structures. *ENGINEERING STRUCTURES*, vol.213, pp. 110553. DOI: 10.1016/j.engstruct.2020.110553
20. Marchelli, M. (2020) Event tree analysis for mountain roads under rockfall hazard. *GEAM. GEOINGEGNERIA AMBIENTALE E MINERARIA*, vol., pp. 41-46
21. Marchelli, M., De Biagi, V., Peila, D. (2020) Reliability-Based Design of Protection Net Fences: Influence of Rockfall Uncertainties through a Statistical Analysis. *GEOSCIENCES*, vol.10, pp. 280-1-280-24. DOI: 10.3390/geosciences10080280
22. Marchelli, M., De Biagi, V., Grange, H., Peila, D. (2019) Applicazione del modello di frammentazione frattale ad un caso reale di caduta massi. *Problematiche inerenti la scelta dei parametri di modello. GEAM. GEOINGEGNERIA AMBIENTALE E MINERARIA*, vol.157, pp. 22-32
23. Marchelli, M., De Biagi, V. (2019) Dynamic effects induced by the impact of debris flows on protection barriers. *INTERNATIONAL JOURNAL OF PROTECTIVE STRUCTURES*, vol.10, pp. 116-131. DOI: 10.1177/2041419618798378
24. Marchelli, M., De Biagi, V., Peila, D. (2019) A quick-assessment procedure to evaluate the degree of conservation of rockfall drapery meshes. *FRATTURA E INTEGRITÀ STRUTTURALE*, vol.47, pp. 437-450. DOI: 10.3221/IGF-ESIS.47.34

25. Marchelli, M., De Biagi, V. (2019) Optimization methods for the evaluation of the parameters of a rockfall fractal fragmentation model. *LANDSLIDES*, vol.16, pp. 1385-1396. DOI: 10.1007/s10346-019-01182-y
26. Marchelli, M., Leonardi, A., Pirulli, M. (2018) The clogging mechanism of debris-flow material in the multiple outlets of sectional barriers. *GEAM. GEOINGEGNERIA AMBIENTALE E MINERARIA*, vol.153, pp. 78-85
27. Pirulli, M., Barbero, M., Marchelli, M., Scavia, C. (2017) The failure of the Stava Valley tailings dams (Northern Italy): numerical analysis of the flow dynamics and rheological properties. *GEOENVIRONMENTAL DISASTERS*, vol.4, pp. 1-15. DOI: 10.1186/s40677-016-0066-5

Conference papers

1. Marchelli, M., De Biagi, V. (2023). Event tree analysis and time-integrated reliability design approach for quantifying rockfall risk reduction. In: 15th ISRM Congress 2023 & 72nd Geomechanics Colloquium, Salzburg, 9-14/10/2023
2. Bovet, E., De Biagi, V., Durand, N., Debernardi, A., Marchelli, M., Roveyaz, S. (2023). A multilevel framework for the management of energy infrastructures involved by avalanches. In: international snow science workshop (ISSW) 2023, Bend, Oregon, 8-10/10/2023
3. Marchelli, M., De Biagi, V. (2023). An efficient reliability-based design approach to reduce rockfall risk below a target threshold. In: 3rd JTC1 Workshop on Impact of Global Changes on Landslide Hazard and Risk, Oslo, 07-10/06/2023
4. Marchelli, M., Deangeli, C. (2023). A time-independent reliability based design approach for debris flow flexible barriers. In: DFHM8, 8th International Conference on Debris Flow Hazard Mitigation, Torino, 26-29/06/2023
5. Lambert, S., Marchelli, M., Mohamadi, R., Pavan, R., Rimoldi, P. (2023) Applications of Geosynthetics for Building Passive Protective Structures against Rockfall, Debris Flows and Snow Avalanches. In: Geosynthetics Conference, Kansas City
6. Marchelli, M., De Biagi, V. (2022) A hybrid structure to protect infrastructures from high energy rockfall impacts. In: SEMC 2022: the Eighth international conference on Structural Engineering, Mechanics and Computation, pp. 1-6
7. Marchelli, M., De Biagi, V. (2022) Event tree analysis and comparison for mountain roads under rockfall hazard. In: RocExs 2022, 7th Interdisciplinary Workshop on Rockfall Protection, pp. 1-4
8. De Biagi, V., Marchelli, M. (2022). Reliability analysis of rockfall net fences capacity. In: RocExs 2022, 7th Interdisciplinary Workshop on Rockfall Protection, pp. 1-4
9. Marchelli, M., Peila, D., De Biagi, V. (2021) A time-independent reliability based design approach for rockfall net fences: a comparative analysis within the Eurocode framework. IOP Conference Series. Earth and environmental science, vol.833, pp. 012189. DOI: 10.1088/1755-1315/833/1/012189
10. De Biagi, V., Barbero, M., Castelli, M., Marchelli, M., Peila, D., Scavia, D. (2021). 30 years of Rockfall Engineering research at PoliTO. In: 5th RSS Rock Slope Stability Symposium, pp. 1-3
11. Cauli, A., Chaussod, A., De Maio, M., Grange, A., Lingua, A.M., Marchelli, M., Musci, M.A., Peila, D., Gioia Tore, M., Torelli, G., Ucheddu, M. (2018) Strumenti GIS per la gestione del rischio di caduta massi (GIS tools for rockfall risk management). In: 22th National Conference of the Italian Federation of Scientific Associations for Spatial and Environmental Information (ASITA) 2018, pp. 297-304
12. Marchelli, M., Leonardi, A., Pirulli, M. (2017) Numerical analysis of debris-flow interaction with open barriers. In: PARTICLES 2017. V International Conference on Particle-based Methods - Fundamentals and Applications, pp. 837-848
13. Marchelli, M., Leonardi, A., Pirulli, M. (2017) Modellazione numerica DEM dell'interazione di flussi granulari secchi con barriere a singola apertura: analisi dell'effetto arco e della dinamica di impatto (DEM numerical modelling of the interaction of dry granular flows with single-opening barriers: analysis of the arch effect and impact dynamics). In: IARG 2017 Annual Meeting of Geotechnical Researchers, pp. 1-6
14. Marchelli, M., Pirulli, M., Scavia, C., Rosatti, G. (2016) TRENT2D, a quasi-two-phase numerical code to simulate debris flow dynamics. In: Landslides and Engineered Slopes. Experience, Theory and Practice, vol.3, pp. 1353-1360