

CURRICULUM VITAE

(Last update May 2017)



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Postdoctoral Research Fellow

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PERSONAL DETAILS AND CONTACTS

Date of birth: 31 July 1986

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SUMMARY OF EXPERTISE AND TECHNICAL SKILLS

I am a Post-Doctoral research fellow at the Department of Earth and Environmental Sciences of the University of Pavia (Italy). My expertise are related to applied geology, geotechnologies and disaster management. I have attained very good theoretical knowledge and practical skills in geospatial data analyses by means of Geographic Information System (GIS) and digital imagery processing of multispectral and hyperspectral sensor data. In particular, I gained excellent command of GIS and Remote Sensing software (ESRI ArcGIS, Quantum GIS; Erdas Image; ENVI software; ASD ViewSpecPro Ver.5.6 Software; SNAP; Sentinel 1 and Sentinel 2 toolboxes). I developed very good ability to use R and Matlab software, which I used in the application of data-driven models for shallow landslides susceptibility assessment. Moreover, I improved my knowledge and gained practical experience about liquefaction phenomena through the evaluation of liquefaction potential of soils by the use of cone penetration test (CPT, CPTU) and seismic microzonation activities. The topic of my Post-Doctoral research is the liquefaction susceptibility assessment and seismic microzonation within the LIQUEFACT project funded by the EU within the H2020 – DRS 2015 call (Research Innovation Action - <http://www.liquefact.eu>).

ACADEMIC RECORD

01/11/2016–Present (*Postdoctoral Research Fellow*)

Research project: “Liquefaction hazard assessment at different scales” within the LIQUEFACT project funded by the EU within the H2020 – DRS 2015 call – Area 04, SSD GEO/05 – Geologia Applicata

Place: Department of Earth and Environmental Sciences, University of Pavia, Italy.

Advisor: Prof. C. Meisina

01/11/2013–16/12/2016 (*Doctor of Philosophy, Ph.D.*)

Research project: Shallow landslide susceptibility assessment by means of data driven models, remotely sensed data and field survey: multi-scale analysis and monitoring of predisposing factors in a climate change contexts.

Institution: Department of Earth and Environmental Sciences - University of Pavia, Pavia, Italy
Advisor: Prof. C. Meisina

09/2013 – 10/2013 (*Ph.D. Student in Understanding and Managing Extremes – UME School*)

Institution: Understanding and Managing Extremes (UME) Graduate School, Institute for Advanced Study (IUSS) of Pavia

11/2010–18/04/2013 (*Master Degree - Geosciences and Geotechnologies - LM 74*)

Dissertation: Spectral and mineralogical characterization of coastal sediments in Sabaudia (LT) through the use of MIVIS hyperspectral images, spectroradiometric measurements and laboratory analysis.

Institution: University of Siena - Centre for GeoTechnologies, San Giovanni Valdarno (AR), Italy

Date: 18/04/2013

Final grade: 110/110

Advisor: Prof. L. Disperati

26/09/2012 (*ECDL Geographic Information Systems - GIS*)

ECDL Foundation. AICA (Associazione Italiana per l'Informatica ed il Calcolo Automatico).

Institution: Centre for GeoTechnologies (CGT), University of Siena, San Giovanni Valdarno (AR), Italy

09/2006–26/04/2010 (*Bachelor's degree - Coordinamento delle attività di protezione civile - Disaster Management*)

Dissertation: Evaluation of elements at risk from flooding in Mozambique

Institution: University of Perugia, Foligno (PG), Italy

Date: 26/04/2010

Final grade: 108/110

Advisor: Prof. L. Gregori

SCIENTIFIC ACTIVITY AND WORK EXPERIENCES

11/2013–Present

The research activity is mainly focused on two themes. One is related to the shallow landslides susceptibility assessment in terms of initiation area and run-out. The other, on the liquefaction susceptibility assessment and seismic microzonation.

The shallow landslide susceptibility includes the following topics:

- Sediment connectivity assessment: evaluation of anthropogenic effects on the sediment delivery dynamics in response to slope instability
- Multi-temporal land use change analysis to monitor its influence on shallow landslides distribution
- Statistical implementation of a non-linear regression technique (Generalized Additive Model - GAM) to assess the shallow landslides susceptibility
- The role of the vineyards on shallow landslides

The liquefaction susceptibility regards:

- Collection of geotechnical and geological surveys
 - Laboratory analysis including granulometric analysis and Atterberg limits
 - The geological and geomorphological characterization of the Italian testing site (Cavezzo municipality, Emilia Romagna Region)
 - Elaboration of 3D geological model for seismic microzonation
- Collection of geological and hydrogeological European data used for the realization of liquefaction hazard assessment in Europe

Additionally, other researches were conducted in particular related to the remote sensing for coastal analysis: shoreline dynamics, mineralogical and spectral characterization of coastal sediments by means of Spectral Mixture Analysis.

22/04/2013–28/06/2013 (GIS and Remote Sensing Analyst)

Characterization of beach sediments' composition by means of DAEDALUS airborne multispectral images: Spectral Mixture Analysis (SMA), Spectroscopy (spectroradiometer -FieldSpec3 ASD), X Ray Diffraction (XRD).

Place: Centre for GeoTechnologies - Geomatics Laboratory, San Giovanni Valdarno (AR), Italy

Head of the Geomatics Laboratory: Prof. L. Disperati

INTERNATIONAL EXPERIENCES

28/07/2013–10/08/2013 (ERASMUS Intensive Programme - IP)

Title: Multi-Risk Assessment and Mitigation in Europe (MIRAME)

Main subject:

Risks analysed: Floods, landslides and earthquakes. Hazard and vulnerability data collection/management, integration of multiple hazards scenarios and optimization of multi-risk assessment procedure

Place: University of Siena - Centre for GeoTechnologies, San Giovanni Valdarno (AR), Italy

Partners: Szczecin University, Delft University of Technology, University of Lisbon, University of Aveiro, University of Kiel, Technische Universität Braunschweig

24/07/2011–06/08/2011 (ERASMUS Intensive Programme - IP)

Title: Integrated Multidisciplinary Approach to Flood Risk Analysis (IMARA)

Main subject:

Comprehensive theoretical and practical overview on the up-to-date procedures for risk analysis, including environmental and physical data collection and processing, flood modelling, risk analysis and risk management (104 h.)

Place: University of Siena - Centre for GeoTechnologies, San Giovanni Valdarno (AR), Italy

Partners: Szczecin University, Delft University of Technology, University of Lisbon, University of Aveiro, University of Kiel, Technische Universität Braunschweig

EDITORIAL ACTIVITY

Manuscript reviewer for: Sciences of Total Environment, GIScience & Remote Sensing

BIBLIOMETRIC RECORDS

14 Research publications in ISI journals.

H index: Scopus: 2; Web of Science: 1

PUBLICATIONS IN ISI JOURNALS

1. **Persichillo M.G.**, Bordoni M., Cavalli M., Crema S., Meisina C. The role of human activities on sediment connectivity of shallow landslides. Catena. Submitted.
2. Cenci L., Disperati L., **Persichillo M.G.**, Oliveira E.R., Alves F.L., Phillips M. Integrating Remote Sensing and GIS Techniques for Monitoring and Modelling Shoreline Evolution to Support Coastal Risk Management. GIScience & Remote Sensing. Submitted.
3. **Persichillo M.G.**, Bordoni M., Meisina C. (2017). The role of land use changes in the distribution of shallow landslides. Sciences of Total Environment, 574, pp. 924-937. doi:10.1016/j.scitotenv.2016.09.125
4. **Persichillo M.G.**, Bordoni M., Cavalli M., Crema S., Meisina C. (2016). Evaluation of anthropogenic effects on the sediment delivery dynamics in response to slope instability. Rend. Online Soc. Geol. It., Vol. 42, pp. 5-9.
5. **Persichillo M.G.**, Bordoni M., Meisina C., Bartelletti C., Barsanti M., Giannecchini R., D'Amato Avanzi G., Galanti Y., Cevasco A., Brandolini P., Galve J.P. (2016). Shallow landslides susceptibility assessment in different environments. Geomatics, Natural Hazard and Risk, 1-24. DOI: 10.1080/19475705.2016.1265011.
6. **Persichillo M.G.**, Dutta P.G., Bordoni M., Meisina C., Bartelletti C., Barsanti M., Giannecchini R., D'Amato Avanzi G., Galanti Y., Cevasco A. (2016). Nonlinear regression technique to assess the landslide susceptibility of the Kalapahar hill, Guwahati, Assam State (India). Rend. Online Soc. Geol. It., Vol.41, pp. 179-182.

7. Bordoni M., Meisina C., Vercesi A., Bischetti G.B., Chiaradia E.A., Vergani C., Chersich S., Valentino R., Bittelli M., Comolli R., **Persichillo M.G.**, Cislighi A. (2016). Quantifying the contribution of grapevine roots to soil mechanical reinforcement in an area susceptible to shallow landslides. *Soil & Tillage Research*. 163, 195-206. <http://dx.doi.org/10.1016/j.still.2016.06.0040>
8. Bordoni M., **Persichillo M.G.**, Meisina C. (2016). The role of the vineyards on slope stability: a case study from an area susceptible to shallow landslides. *Rend. Online Soc. Geol. It.*, Vol. 39, pp. 8-11, doi: 10.3301/ROL.2016.34
9. Bordoni M., **Persichillo M.G.**, Meisina C., Cevasco A., Giannecchini R., D'Amato Avanzi G., Galanti Y., Bartelletti C., Brandolini P., Zizioli D. (2015). Developing and testing a data-driven methodology for shallow landslide susceptibility assessment: preliminary results. *Rend. Online Soc. Geol. It.*, Vol. 35, pp. 25-28, 3 figs., doi: 10.3301/ROL.2015.55.

ISI PROCEEDINGS

1. **Persichillo M.G.**, Bordoni M., Meisina C., Bartelletti C., Giannecchini R., D'Amato Avanzi G., Galanti Y., Barsanti M., Cevasco A., Brandolini P., Galve J.P. (2017). Remarks on the role of landslide inventories in the statistical methods used for the landslide susceptibility assessment. 4th WLF 2017 (accepted).
2. Bartelletti C., Giannecchini R., D'Amato Avanzi G., Galanti Y., Barsanti M., **Persichillo M.G.**, Bordoni M., Meisina C., Cevasco A., Galve J.P. (2017). Analysis of the predisposing factors for different landslide types using the Generalized Additive Model. 4th WLF 2017 (accepted).
3. Bordoni M., Meisina C., Valentino R., Bittelli M., Chersich S., Musetti M., **Persichillo M.G.** (2017). Analysis of hydro-meteorological monitoring data collected in different contexts prone to shallow landslides of the Oltrepò Pavese (northern Italy). 4th WLF 2017 (accepted).
4. **Persichillo M.G.**, Bordoni M., Meisina C., Bartelletti C., Giannecchini R., D'Amato Avanzi G., Galanti Y., Cevasco A., Brandolini P., Galve J.P., Barsanti M. (2016). Shallow landslides susceptibility analysis in relation to land use scenarios. In Aversa et al. (Eds), *Landslides and Engineered Slopes. Experience, Theory and Practices: Proceedings of the 12th International Symposium on Landslides* (Napoli, Italy, 12-19 June 2016). 3, 1605-1612
5. Bordoni M., Meisina C., Chersich S., **Persichillo M.G.**, Valentino R., Bittelli M. (2016). Monitoring of hydrological parameters for the identification of shallow landslides triggering: A case study from Northern Italy. In Aversa et al. (Eds), *Landslides and Engineered Slopes. Experience, Theory and Practices: Proceedings of the 12th International Symposium on Landslides* (Napoli, Italy, 12-19 June 2016). 2, 475-482
6. Bordoni M., **Persichillo M.G.**, Meisina C., Chersich S., Vercesi A., Bischetti G.B., Chiaradia E.A., Cislighi A., Vergani C., Valentino R., Bittelli M., Comolli R. The role of the vineyards on shallow landslides. In Aversa et al. (Eds), *Landslides and Engineered Slopes. Experience, Theory and Practices: Proceedings of the 12th International Symposium on Landslides* (Napoli, Italy, 12-19 June 2016). 2, 467-474.
7. Bordoni M., Meisina C., Valentino R., **Persichillo M.G.**, Bittelli M., Chersich S. (2016). The Impact of Hydrological Parameters on Modelling Slope Safety Factor Towards Shallow Landslides: A Case Study from Oltrepò Pavese. 3rd European Conference on Unsaturated Soils, E-UNSAT 2016; Ecole des Ponts, Marne la Vallée Paris; France; 12 September 2016 through 14 September 2016; Code 126341.
8. Meisina C., Valentino R., Bittelli M., Bordoni M., Chersich S., **Persichillo M.G.** (2016). Field investigation of soil-atmosphere interaction on a slope prone to shallow landslides. 1st IMEKO TC4 International Workshop on Metrology for Geotechnics, MetroGeotechnics, Benevento, Italy, March 17-18 2016, pp. 224-229
9. **Persichillo M.G.**, Cenci L., Disperati L., Ballerano M., Barducci A., Guzzi D., Nardino V., Pippi I., Rindinella A., Meisina C. (2015). Assessing the Daedalus sensor's performance by means of spectral mixture analysis in the Migliarino, san Rossore, Massaciuccoli regional park. *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Milan, July 26-31, 2015, pp. 4460-4463
10. Cenci L., **Persichillo M.G.**, Disperati L., Oliveira E.R., Lopes Alves F., Pulvirenti L., Rebora N., Boni G., Phillips M. (2015). Remote sensing for coastal risk reduction purposes: optical and microwave data fusion for shoreline evolution monitoring and modelling. *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Milan, July 26-31, 2015, pp. 1417-1420

CONFERENCES, SEMINARS AND WORKSHOPS**2016****Oral presentations**

Persichillo M.G., Meisina C., Cavalli M., Crema S., Bordoni M. Evaluation of anthropogenic effects on the sediment delivery dynamics in response to slope instability. **GIT 2016**, 13 - 15 June 2016, Torino, Italy

Persichillo M.G., Meisina C., Cavalli M., Crema S., Bordoni M. (2016). Understanding the relationship between sediment connectivity and spatio-temporal landscape changes in two small catchments. *Geophysical Research Abstracts* Vol. 18, EGU2016-3070, **EGU General Assembly**, 17–22 April 2016, Vienna, Austria

Persichillo M.G., Dutta P.G., Bordoni M., Meisina C., Bartelletti C., Barsanti M., Giannecchini R., D'Amato Avanzi G., Galanti Y., Cevasco A. Nonlinear regression technique to assess the landslide susceptibility of the Kalapahar hill, Guwahati, Assam State (India). **X Convegno dei Giovani Ricercatori di Geologia Applicata 2016**, 18-19 February 2016, Bologna, Italy

Poster presentations

Bordoni M., Meisina C., Valentino R., Bittelli M., Bischetti GB., Vercesi A., Chersich S., **Persichillo M.G.** (2016). A multidisciplinary methodological approach for slope stability assessment of an area prone to shallow landslides. *Geophysical Research Abstracts* Vol. 18, EGU2016-8923, **EGU General Assembly**, 17–22 April 2016, Vienna, Austria

Meisina C., Bordoni C. Bischetti G., Vercesi G., Chiaradia E., Cislighi A., Valentino R., Bittelli M., Vergani C., Chersich S., **Persichillo M.G.**, Comolli R. (2016). Effects of grapevine root density and reinforcement on slopes prone to shallow slope instability. *Geophysical Research Abstracts* Vol. 18, EGU2016-8547, **2016 EGU General Assembly**, 17–22 April 2016, Vienna, Austria

2015**Oral presentations**

Cenci L., **Persichillo M.G.**, Disperati L., Oliveira E.R., Lopes Alves F., Pulvirenti L., Rebora N., Boni G., Phillips M. Remote sensing for coastal risk reduction purposes: optical and microwave data fusion for shoreline evolution monitoring and modelling. **IEEE International Geoscience and Remote Sensing Symposium (IGARSS)**, 26-31 July 2015, Milan, Italy

Poster presentations

Persichillo M.G., Cenci L., Disperati L., Ballerano M., Barducci A., Guzzi D., Nardino V., Pippi I., Rindinella A., Meisina C. Assessing the Daedalus sensor's performance by means of spectral mixture analysis in the Migliarino, san Rossore, Massaciuccoli regional park. **IEEE International Geoscience and Remote Sensing Symposium (IGARSS)**, 26-31 July 2015, Milan, Italy

Cenci L., **Persichillo M.G.**, Disperati L., Oliveira E.R., Lopes Alves M.F., Boni G., Pulvirenti L., Phillips M. (2015). Validation of short-terms shoreline evolution model and coastal risk management implications. The case study of the NW Portuguese coast (Ovar-Marinha Grande). *Geophysical Research Abstracts* Vol. 17, EGU2015-6299-2, **2015 EGU General Assembly 2015**

2014**Oral presentations**

Persichillo M.G., Taramelli A., Valentini E., Filipponi F., Meisina C., Zucca F. (2014). Understanding relationships between morphology and ecosystem structure in a shallow tidal basins of Venice lagoon. *Geophysical Research Abstracts* Vol. 16, EGU2014-785. **2014 EGU General Assembly 2014**

2013**Oral presentations**

Persichillo M.G., Barducci A., Cenci L., Guzzi D., Nardino V., Pippi I., Rindinella A., Disperati L. (2013). Verifica delle potenzialità del sensore DAEDALUS nello studio dei sedimenti costieri nel Parco di San Rossore* (Verification of the Daedalus sensor potentiality for coastal sediments study. Study area: San Rossore Massaciuccoli Park). 7th thematic workshop: il telerilevamento per il monitoraggio e la gestione del territorio, San Martino in Pensilis (CB, Italy), pp. 51-52

Disperati L., Barducci A., Cenci L., Guzzi D., Lastri C., Nardino V., **Persichillo M.G.**, Pippi I., Rindinella A., Trefolini E. (2013). Diagnostic capabilities of Daedalus ATM-2 sensor for monitoring the beach sediment composition of the Regional Park Migliarino San Rossore Massaciuccoli: first results. AGEA (Rome, Italy), 23 May 2013

2012

Poster presentations

Disperati L., Manzo C., Teramelli A., Innocenti C., Valentini E., **Persichillo M.G.**, Pompilio L., Pepe M. (2012). 0,35 - 2,5 μm spectral characterization of coastal sediments in central Italy (Sabaudia, Latina). 34th International Geological Congress, Brisbane Australia 2012

DELIVERABLE REPORT ON LIQUEFACTION PROJECT

(H2020 European union funding for Research and Innovation)

01/02/2017 Deliverable 2.1

Lai C.G., Meisina C., Cosentini R.M., Bozzoni F., **Persichillo P.**, Bordoni M., Tumiatì M. Report on ground characterization of the four areas selected as testing sites by using novel technique and advances methodologies to perform in situ and laboratory tests.

30/04/2017 Deliverable 2.2

Lai C.G., Meisina C., **Persichillo P.**, Famà A., Bozzoni F., Cosentini R.M. GIS platform including data for liquefaction hazard assessment in Europe (version 1)

SUPERVISING ACTIVITIES

Master degree students

2015-2016 Dario Saviori (Environmental Engineering - University of Pavia)

Determinazione delle soglie pluviometriche per l'innescio di frane superficiali in Oltrepo Pavese (Estimation of rainfall thresholds triggering shallow landslides in the Oltrepo Pavese). *February 2016*

2014-2015 Marzia Ballerano (Geosciences and Geotechnologies - University of Siena)

Studio dei sedimenti costieri dell'area di Migliarino - San Rossore (Pisa) attraverso l'elaborazione di immagini telerilevate Daedalus (Study of coastal sediments of Migliarino - San Rossore (Pisa) area through the elaboration of remotely sensed Daedalus images). *April 2015*

2017 – Present Giuseppe Cerra (Applied geological sciences – University of Pavia)

Bachelor's degree student

2016-2017 Beatrice Corradini (Geological sciences - University of Pavia)

Caratterizzazione geologico-tecnica di sabbie liquefacibili in comune di Cavezzo (Emilia Romagna) April 2017