

PERSONAL INFORMATION

Marianna Adinolfi



-  Italy
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POSITION

Researcher

WORK EXPERIENCE

October, 2018 – Present

Researcher

CMCC (Euro-Mediterranean Centre on Climate Change) – REgional Modeling and geo-Hydrological Impacts (REMHI) Division, Viale Thomas Alva Edison s.n.c. 81100 Caserta, Italy

- Development and post-processing of climate simulations by means of the regional climate model COSMO-CLM (Consortium for Small Scale Modelling in Climate mode) at different horizontal resolutions and convection permitting models, as part of CORDEX – Flagship Pilot Studies projects CPM (Convection Permitting Models).
- Research activities, analyses and management of climate data, especially concerning the urban environment and extreme events.
- Management of research activities related to national and international projects such as EUCP (European Climate Prediction system - Horizon 2020), VENEZIA 2021-CORILA, HIGHLANDER, Strategic project.
- Assessment of climate change impacts on structures, ground and energy geo-structures such as energy piles.

July, 2018 – September 2018

Researcher

University of Napoli "Parthenope", Italy, Department of Engineering

Research activities within RELUIS 2018 project (WP2) related to the assessment of the slope stability of rock blocks under seismic actions.

January, 2017 – March, 2017

Researcher

University of Napoli "Parthenope", Italy, Department of Engineering

Research activities funded by the Department of Engineering related to the analyses of monitoring results on a real sheet pile wall.

June, 2013 – December, 2013

Research Grant (art. 22 L. 240/2010)

University of Napoli "Parthenope", Italy, Department of Engineering

Research activities within MIUR-PRIN 2010-2011 focusing on the mitigation of landslide risk by the use of sustainable actions.

May, 2013 – June, 2013

Researcher

University of Napoli "Parthenope", Italy, Department of Engineering in association with Enel Greenpower

Research activities on the results of a monitoring activity and assessment of slope stability related to an energy plant in Piancastagnaio (SI).

October, 2012 – January, 2013

Researcher

University of Salerno, Italy, Department of Civil Engineering

Characterization and calibration of the rheologic properties of pyroclastic soils involved in debris flows.

March, 2010 – December, 2016

Freelance professional

C.U.G.R.I. (Consorzio inter-universitario per la Previsione e Prevenzione dei Grandi Rischi Università di Salerno – Università di Napoli Federico II) with ex-Autorità di Bacino Nazionale dei fiumi Liri – Garigliano e Volturno

Scientific support about the state of the art and database creation for monitoring activities of debris flows.

June, 2009 – October, 2009

Scholarship

University of Salerno, Italy, Department of Civil Engineering

Research activities within MIUR-PRIN 2007-2008 focusing on the assessment of landslides hazard due to extreme events such as heavy precipitations and seismic events.

EDUCATION AND TRAINING

January, 2014 – May, 2017

Ph. Doctor Europaeus in Energy Science and Engineering

University of Napoli "Parthenope", Department of Engineering

- I mainly focused on coupled numerical models related to energy-geostructures as energy piles and energy sheet pile wall. With this aim I performed a detailed state-of-the-art review about Finite Elements Methods and coupled approaches. Doing so, I developed my own thermo-hydro-mechanical model by means of Comsol program, validated against the available data from the literature and then used for a case study in Napoli (Italy). The title of my Ph.D. thesis is "Thermo-hydro-mechanical behaviour of energy geostructures: experimental and numerical investigations", in English, supervised by Prof. Ing. S. Aversa, Prof. Ing. N. Massarotti, Prof. Rosa Maria Stefania Maiorano, Prof. L. Laloui.
- I devoted myself also to the design and realization of the experimental campaign on an energy sheet pile wall built in an underground station in Napoli where temperatures and deformations were monitored by Optical Fiber Sensors during heating tests on energy piles. I treated experimental data with Microsoft Excel computer program.
- I worked also on different research lines in the field of stability conditions of rock blocks under seismic events, developing dynamic analyses with Simulink and Matlab tools and I was part of a team of researches for the seismic performance-based design approach for slope stabilizing piles.
- I followed specific courses such as: Water-Energy Nexus, Energy From Waste, Cogeneration And Trigeneration, Renewable Energy Systems, Energy Conversion And Storage (Technologies And Materials), Computational Fluid Dynamics, Finite Element Method, Solar Energy Systems, Microcogeneration And Distributed Poligeneration, Internal Combustion Engines, Meshless Numeric AI Methods For Fluid And Solid Mechanics, Model Order Reduction.
- I was a teaching assistant for Bachelor Courses of "Soil mechanics" and "Seismic geotechnics"
- I was co-supervisor of several Bachelor and Master Theses.

July, 2016 – November, 2016

Internship

EPFL - École Polytechnique Fédérale de Lausanne, Switzerland

My abroad experience during Ph.D. was at EPFL under the supervision of Prof. L. Laloui. The main aim was the understanding of the thermo- mechanical behaviour of energy geo-structures such as energy piles and energy piles group.

January, 2006 – February, 2008

Master Degree in Environmental Engineering, with honour

University of Salerno, Italy

The title of my Master thesis is “Displacement scenarios for active landslides by using creep phenomenological models”, supervised by Prof. Ing. L.Cascini.
I enhanced my skills in the fields of Environmental Engineering, Landslides, Geotechnics and Retaining Structures, Hydraulic, Geology and Hydrogeology, Seismic structures.

September, 2007 – February, 2008

Erasmus Student

UPC - Polytechnic University of Catalonia, Spain

Under the supervision of Prof. A. Lesdesma, the experience at UPC was focused on the study of the viscous behavior of clayey soils and the prediction of movements for slow moving active landslides involving these soils such as the Vallcebre landslide.

October, 2002 – December, 2005

Bachelor Degree in Environmental Engineering, with honour

University of Salerno, Italy

The title of my Master thesis is “Management of hydric resources in Salerno”, supervised by Prof. Ing. P. Villani.
I enhanced my skills in the fields of Mathematics, Physics, Chemistry, Hydraulic and Hydrology, Geotechnics and Soil mechanics, Waste treatments.

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
	ESOL B1 Certificate in English (2008) Trinity Certificate Level 6 (2002)				
French	A2	A2	A1	A1	A1
Spanish	A2	A1	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Good communication skills gained through national and international experiences in working groups. Good skills in communication with colleagues and multidisciplinary environments. Ability in problem solving and excellent capacity for teamwork .

Organisational / managerial skills

Leadership and organizational skills gained through the research experiences and university studies. Keeping of deadlines.

Job-related skills

High-level skills in the use of coupled models and interpretation of physics of phenomena gained through my research and the “engineered approach” provided by university studies.

Computer skills

Good command of Windows Systems, Microsoft Office™ tools (Word, Excel, PowerPoint), Internet browsers, e-mail tools and Unix environment gained through job activities.
Good command of the following software: MatLab, Climate Data Operators (CDO), netCDF

Operators (NCO), AutoCAD, Comsol Multiphysics to FEM models, Grapher, Photoshop, Allplan, Acrobat Pro, Geo-Studio.

Driving licence B

ADDITIONAL INFORMATION

Publications

- Ban N., Brisson E., Caillaud C., Coppola E., Pichelli E., Sobolowski S., Adinolfi M., Ahrens B., Alias A., Anders I., Bastin S., Belusic D., Berthou S., Cardoso R.M., Chan S., Christensen O. B., Fernandez J., Fita L., Frisius T., Goergen K., Haugen J. E., Hodnebrog O., Kartsios S., Katragkou E., Kendon E.J., Keuler K., Lavin-Gullon A., Lenderink G., Leutwyler D., Lorenz T., Mercogliano P., Milovac J., Panitz H. J., Raffa M., Remedio A.R., Schar C., Soares P. M. M., Steensen B. M., Stocchi P., Tolle M. H., Truhetz H., Vergara-Temprado J., de Vries H., Warrach-Sagi K., Wulfmeyer V., Zander M. (2020). The first multi-model ensemble of regional climate simulations at the kilometer-scale resolution, Part I: Evaluation of precipitation. *Climate Dynamics* manuscript CLDY-D-19-01062. Under review.
- Adinolfi, M., Raffa, M., Reder, A., Mercogliano, P. (2020). Evaluation and expected changes of summer precipitation at convection permitting scale with COSMO-CLM over Alpine space. *Atmosphere* -1019119. Under review.
- Adinolfi, M., Rotta Loria, A. F., Laloui, L., & Aversa, S. (2020). Experimental and numerical investigation of the thermo-mechanical behavior of an energy sheet pile wall. *Geomechanics for Energy and the Environment*, 100208. <https://doi.org/10.1016/j.gete.2020.100208>
- Adinolfi M., Rianna G., Mercogliano P., Maiorano R. M. S., Aversa, S. (2020). Behaviour of energy piles under climate-change scenarios: a case study in Southern Italy. *Environmental Geotechnics*, 1-15. <https://doi.org/10.1680/jenge.19.00093>
- Adinolfi M, Mauro A, Maiorano RMS, Massarotti N, Aversa S. (2018). On the influence of thermal cycles on the yearly performance of an energy pile. *Geomechanics for Energy and the Environment*. <https://doi.org/10.1016/j.gete.2018.03.004>
- Maiorano RMS, Adinolfi M, Aversa S. (2015). Rocking of slender rock blocks under seismic excitation. *Rivista Italiana di Geotecnica*, 49 (2), pp. 87-99.

Conference papers

- Adinolfi M, Maiorano RMS, Aversa S. (2020). Experimental results on an energy pile within a sheet pile wall in Napoli. In *Proceedings of 2nd International Conference on Energy Geotechnics (ICEGT 2020)* <https://doi.org/10.1051/e3sconf/202020506001>
- Ban, N., Brisson, E., Caillaud, C., Coppola, E., Pichelli, E., Sobolowski, S., ... & Bastin, S. (2020, May). The first multi-model ensemble of regional climate simulations at kilometer-scale resolution, Part I: Evaluation of precipitation. In *EGU General Assembly Conference Abstracts* (p. 22378) <https://doi.org/10.5194/egusphere-egu2020-22378>
- Adinolfi M, Maiorano RMS, Aversa S. (2019). On the stability of slender rock blocks subjected to horizontal and vertical seismic accelerations. In *Proceedings of 7th International Conference on Earthquake Geotechnical Engineering*. Rome, Italy, 17-20 June 2019.
- Adinolfi M., Maiorano R.M.S, Aversa S. (2017). Analisi numeriche per la previsione del comportamento di un palo geotermico in terreni piroclastici. *Incontro Annuale dei Ricercatori Geotecnica*. IARG Matera 5-7 luglio 2017.
- Adinolfi M, Mauro A, Maiorano RMS, Massarotti N, Aversa S. (2016). Thermo-mechanical behaviour of energy pile in underground railway construction site. In *Proceedings of 1st International Conference of Energy Geotechnics* (Frank, Bauer

and Sánchez (eds)). Kiel, Germany, 29-31 August 2016.

- Adinolfi M, Mauro A, Maiorano RMS, Massarotti N, Aversa S. (2016). Experimental set-up and thermo hydro mechanical model for an energy pile. In Proceedings of a Conference on computational methods for thermal problems (Massarotti, Nithiarasu and Joshi (eds)). Georgia Tech, Atlanta, USA, 6-8 July 2016.
- Adinolfi M, Di Laora R, Maiorano RMS, Aversa S. (2015). A seismic performance-based design approach for slope stabilizing piles. COMPDYN 2015 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering M. Papadrakakis, V. Papadopoulos, V. Plevris (eds.) Vol.2, pp. 2815-2827 ISBN: 978-960-99994-7-2, Crete Island, Greece, 25–27 May 2015.
- Adinolfi M, Di Laora R, Maiorano RMS, Aversa S. (2015). Valutazione degli spostamenti sismoindotti in pendii stabilizzati con pali. Incontro Annuale dei Ricercatori Geotecnica. Cagliari 24-26 giugno 2015.
- Adinolfi M., Maiorano R.M.S., Aversa S. (2014). Alcune considerazioni sul ribaltamento di blocchi rocciosi sotto azioni sismiche. In: La geotecnica nella difesa del territorio e delle infrastrutture dalle calamità naturali. XXV Convegno Nazionale di Geotecnica, Baveno (Italia), 4-6 Giugno 2014, vol. 2, ISBN/ISSN: 978-88-97517-05-4.

Technical reports

- Spano D., Mereu V., Bacciu V., Marras S., Trabucco A., Adinolfi M., Barbato G., Bosello F., Breil M., Coppini G., Essenfelder A., Galluccio G., Lovato T., Marzi S., Masina S., Mercogliano P., Mysiak J., Noce S., Pal J., Reder A., Rianna G., Rizzo A., Santini M., Sini E., Staccione A., Villani V., Zavatarelli M., 2020. "Analisi del rischio, cambiamenti climatici in Italia". DOI: 10.25424/cmcc/analisi_del_rischio
- Di Prisco C., Galli A., Aversa S., de Sanctis L., Maiorano R.M.S., Adinolfi M., Di Laora R., Tricarico M. (2016). LA MITIGAZIONE DEL RISCHIO DA FRANA MEDIANTE INTERVENTI SOSTENIBILI. Linee Guida - PRIN 2010-2011.

Honour and awards

Best 2008 (Bologna Experience for Superior Talents): I was selected among the best 50 Italian graduated of the year 2008 by Alma Graduate School Bologna (University of Bologna, Fondazione Marconi and Fondazione Carisbo) under High Patronize of the President of Italian Republic.

Additional Courses

April 2019: COSMO/CLM/ART/ICON Training Course and activities in NWP (Numerical Weather Prediction), RCM (Regional Climate Model) and Cosmo Art held in DWD in Langen (Germany).

Memberships

Member of the Climate Limited-area Modelling Community (CLM Community) since November 2018.

Member of the Italian Geotechnics Association (AGI) since April 2013.

Member of Engineers Association of Salerno (Italy) since October 2008.

Personal details

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.

Data: 22/12/2020

Firma: Marianna Adinolfi

