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Work experience

From 2014 to today: Associate professor of Geotechnical Engineering
University of Basilicata, Potenza, Italy
From 2005 to 2014: Assistant professor of Geotechnical Engineering
University of Basilicata, Potenza, Italy

Teaching

From 2026: Professor of Soil Mechanics at University of Basilicata
From 2014 to today: Professor of Soil and Foundation Dynamics, and Slope Stability, at University of Basilicata
Professor of Slope Stability at Universidad Mayor, Real y Pontificia de San Francisco Xavier de Chuquisaca (2019)
From 2005 to 2014: Professor of Soil Mechanics, and Soil and Foundation Dynamics, at University of Basilicata
Supervisor of postgraduate students, Masters' and Doctoral research theses

Education and training

2003: Italian Doctoral degree (Ph.D. equivalent) in Geotechnical Engineering - Consortium of Universities Federico II of Naples and of Rome La Sapienza
1998: Graduated with honours in Civil Engineering (specialty: Geotechnics) - University of Naples Federico II

Research Interests

- Slope Stability;
- Monitoring of landslides and civil engineering works;
- Pore water pressures and hydraulic conductivity: experimental and theoretical analysis;
- Landslide-structure interaction;
- Numerical modelling of landslide behaviour;
- Landslide risk mitigation;
- Saturated and unsaturated soil mechanics;
- Advanced laboratory soil testing;
- Coupled chemo-mechanical analysis of soil behaviour;
- Factors influencing compressibility, shear strength and permeability of clay soils;
- Shear creep behaviour;
- Soil improvement.

Recent Research Projects

Participation to:
DPC-ReLUIS 2024-2026 project, WP3 (Italian Department of Civil Protection – inter-university Consortium of Earhquake and Structural Engineering)
SAFER-REBUILT Project (Sustainable Approaches For Earthquake Resistant_REhabilitation solutions for the BUILT environment") of the Return (multi-Risk sciEnce for resilienT commUnities undeR a changiNg climate) partnership

MITIGO project (Mitigation of natural hazards for safety and mobility in mountain areas of southern Italy) PNR 2015-2020 – cod. ARS01_00964 (member of the steering group and research units, from 2020 to today)
STAC-UP project for the expansion and strengthening of research infrastructures of Basilicata Region (2022 – today)
Tech4You PNRR project (Technologies for climate change adaptation and quality of life improvement) (2023-2025)
Research Project of Relevant National Interest (PRIN 2015) Innovative monitoring and design strategies for sustainable landslide risk mitigation
Research Project of Relevant National Interest (PRIN 2010-2012: Landslide risk mitigation through sustainable countermeasures)
Applied studies funded by Rete Ferroviaria Italiana s.p.a.: 1. Monitoring of two active landslide systems affecting the national railway line (2021-2023), 2. Analysis of the efficiency of remedial measures realized in the Calciano landslide (2018-2021), 3. Study of two landslide systems in the Costa della Gaveta district in Potenza (2017-2020).
Jointly in charge of the Agreement between the Department of Engineering of University of Basilicata and the Extraordinary Commissioner for hydrogeological risk mitigation in Basilicata (2025)

Other Information

National Scientific Habilitation to the functions of Full Professor (2020)
Member of the Steering Council of the Italian Geotechnical Society from 2018 to 2021
In charge of the Soil Mechanics Laboratory of University of Basilicata from 2014 to 2016 and from 2024 on
Member of the Technical Committees of the International Society ISSMGE "Environmental Geotechnics" - TC 215 and “Geo-education” - TC306

List of selected papers on landslides’ behaviour and mitigation

1. Urciuoli G. Coppola L., d'Onofrio A., Massaro L., Pagano L., Picarelli L., Santo A., Vassallo R. (2026). A multiple rotational slide-earthflow in Southern Apennines: The Pietrapertosa landslide. Engineering Geology 372, 109027.
2. Vassallo R., Di Maio R. (2025). Effects of trench drain systems on pore water pressures in slow, deep, clayey landslides: Influence of hydraulic properties of the slip zone. Engineering Geology 347, 107943.
3. Picarelli L., Santo A., Di Crescenzo G., Vassallo R., Urciuoli G., Silvestri F., Olivares L. (2022). A complex slope deformation case—history. Landslides, https://doi.org/10.1007/s10346-022-01866-y.
4. Vassallo R., De Rosa J., Di Maio C., Reale D., Verde S., Fornaro, G. (2021). In situ and satellite long-term monitoring of two earthflows of the Italian southern Apennines and of the structures built on them. Italian Geotechnical Journal, 55(4), pp. 77-95.
5. Di Maio C., De Rosa J., Vassallo R. (2021). Pore water pressures and hydraulic conductivity in the slip zone of a clayey earthflow: experimentation and modelling. Engineering Geology, vol. 292, https://doi.org/10.1016/j.enggeo.2021.106263.
6. Minardo A, Catalano E., Coscetta A., Zeni G., Di Maio C., Vassallo R., Picarelli L., Coviello R., Macchia G, and Zeni L., (2021). Long-term monitoring of a tunnel in a landslide prone area by Brillouin-based distributed optical fiber sensors. Sensors 2021, 21(21), 7032; https://doi.org/10.3390/s21217032
7. Vassallo R., Calcaterra S., D’agostino N., De Rosa J., Di Maio C., Gambino P. (2020). Long-Term Displacement Monitoring of Slow Earthflows by Inclinometers and GPS, and Wide Area Surveillance by COSMO-SkyMed Geosciences 10(5), 171.
8. Mishra M., Singh Basson M., Ramana V., Vassallo R. (2020). Ant colony optimization for slope stability analysis applied to an embankment failure in eastern India. International Journal of Geo-Engineering, 11 (1), art. n. 3.
9. Di Maio C., De Rosa J., Vassallo R., Coviello R., Macchia G. (2020). Hydraulic conductivity and pore water pressures in a clayey earthflow: experimental data. Geosciences, 10(3), 102 .
10. Vassallo R., Mishra M., Santarsiero G., Masi A. (2019). Modeling of landslide - tunnel interaction: the Varco d’Izzo case study. Geotechnical and Geological Engineering, 37, 5507–5531.
11. Di Maio C., Fornaro G., Gioia D., Reale D., Schiattarella M., Vassallo R. (2018). In situ and satellite long-term monitoring of the Latronico landslide, Italy: displacement evolution, damage to buildings, and effectiveness of remedial works. Engineering Geology, vol. 245, pp. 218–235.

12. Minardo A., Catalano E., Coscetta A., Zeni G., Zhang L., Di Maio C., Vassallo R., Coviello R., Macchia G., Picarelli L., Zeni L. (2018). Distributed Fiber Optic Sensors for the Monitoring of a Tunnel Crossing a Landslide. Remote Sensing, vol. 10, ISSN: 2072-4292, doi: 10.3390/rs10081291.
13. Di Maio C., Vassallo R., Scaringi G., De Rosa J., Pontolillo D.M., Grimaldi G.M. (2017). Monitoring and analysis of an earthflow in tectonized clay shales and study of a remedial intervention by KCl wells. Rivista Italiana di Geotecnica Anno LI, n.3, pp.48-63.
14. Vassallo R., M. Mishra, G. Santarsiero, A Masi (2016). Interaction of a railway tunnel with a deep slow landslide in clay shales. Elsevier Procedia Earth and Planetary Science, n.16, pp.15-24.
15. Vassallo R., Doglioni A., Grimaldi G.M., Di Maio C., Simeone V. (2016). Relationships between rain and displacements of an active earthflow: a data-driven approach by EPRMOGA. Natural Hazards, vol. 81, pp. 1467-1482.
16. Di Maio C., Scaringi G., Vassallo R. (2015). Residual strength and creep behaviour on the slip surface of specimens of a landslide in marine origin clay shales: influence of pore fluid composition. Landslides: vol. 12(4), pp 657-667.
17. D'Onza F., Wheeler S.J., Gallipoli D., Barrera Bucio M., Hofmann M., Lloret-Cabot M., Lloret Morancho A., Mancuso C., Pereira J.-M., Romero Morales E., Sánchez M., Sołowski W., Tarantino A., Toll D.G., Vassallo R. (2015). Benchmarking selection of parameter values for the Barcelona basic model. Engineering Geology, vol. 196, pp. 99-118.
18. Vassallo R., Grimaldi G., Di Maio C. (2015). Pore water pressures induced by historical rain series in a deep-seated clayey landslide: 3D modeling. Landslides, vol. 12(4), pp. 731-744.
19. Di Maio C., Vassallo R., Vallario M. (2013). Plastic and viscous displacements of a deep and very slow landslide in stiff clay formation. Engineering Geology, vol.162, pp. 53 - 66.
20. Di Maio C. Vassallo R. (2011). Geotechnical characterization of a landslide in a Blue Clay slope. Landslides, DOI 10.1007/s10346-010-0218-8, vol.8, pp. 17-32.
21. D'Onza, F., D. Gallipoli, S. Wheeler, F. Casini, J. Vaunat, N. Khalili, L. Laloui, C. Mancuso, D. Mašín, M. Nuth, J.M. Pereira, R. Vassallo (2011). Benchmark of constitutive models for unsaturated soils. Géotechnique, vol. 61 (4), pp. 283-302. DOI 10.1680/geot.2011.61.4.283.
22. Di Maio C., Vassallo R., Vallario M., Pascale S., Sdao F. (2010). Structure and kinematics of a landslide in a complex clayey formation of the Italian Southern Apennines. Engineering Geology, vol. 116, pp. 311-322.

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