

PERSONAL INFORMATION **Giorgio Cassiani**

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input checked="" type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

SSD: GEO/11 – Geofisica Applicata

WORK EXPERIENCE

- Dates 2015 – today
 - Name and address of the employer Department of Geosciences, University of Padova
 - Occupation or position held **Full professor – Applied Geophysics**

- Dates 2006 – 2015
 - Name and address of the employer Department of Geosciences, University of Padova
 - Occupation or position held **Associate professor – Applied Geophysics**

- Dates 2001 – 2006
 - Name and address of the employer Department of Earth Sciences and Geotechnology
University of Milan – Bicocca, Milan, Italy
 - Occupation or position held **Assistant professor – Applied Geophysics**

- Dates 1999 – 2001
 - Name and address of the employer Department of Environmental Science, Lancaster University, Lancaster, UK.
 - Occupation or position held **Lecturer (B) - Contaminant Hydrogeology**

- Dates 1997 – 1999
 - Name and address of the employer ENI S.p.A., Agip Division, Milan, Italy
 - Occupation or position held **Environmental Specialist**

EDUCATION AND TRAINING

- Dates (from - to) 1993-1997
 - Name and type of organisation providing education and training Duke University, USA
 - Principal subjects/occupational skills covered Subsurface hydrology
 - Title of qualification awarded **Ph.D. in Civil and Environmental Engineering**

- Dates (from - to) 1993-1996
 - Name and type of organisation providing education and training University of Trieste

- Principal subjects/occupational skills covered Environmental Geophysics
- Title of qualification awarded **Ph.D. in Applied Geophysics**

- Dates (from - to) 1993-1995
- Name and type of organisation providing education and training Duke University, USA
- Principal subjects/occupational skills covered Subsurface hydrology
- Title of qualification awarded **M.Sc. in Civil and Environmental Engineering**

- Dates (from - to) 1984 – 1991
- Name and type of organisation providing education and training University of Trieste
- Principal subjects/occupational skills covered Mining Engineering
- Title of qualification awarded **M.Sc., *Summa cum laude***

WORK ACTIVITIES

Main projects and grants (excerpts)

Supervisor - Geophysical Roots Observation for Water savING in arboriculture, viticulture and agronomy (GROWING), funded by Marie Skłodowska-Curie Individual Fellowships H2020 programme. Total funding € 251002 (2020-2023).

PI - ECZ-Dry: New technologies to monitor the Earth Critical Zone in water-limited ecosystems. Project funded by Italy-Israel Scientific and Technological Cooperation Programme: € 99,980 (2019-2022).

Coordinator: WASA: Water Saving in Agriculture: technological developments for the sustainable management of limited water resources in the Mediterranean area. Project funded in the EU FP7 ERANET-MED scheme, consortium composed of 8 partners from 6 countries (Italy, Portugal, Morocco, Tunisia, Egypt and Turkey. Total funding € 450,000 (2016-2019).

PI of UNIPD unit: EU Framework Programme 7 Collaborative Project GLOBAQUA “Managing the effects of multiple stressors on aquatic ecosystems under water scarcity”. Total funding from the European Commission € 7,590,588 of which € 195,281 for the Department of Geoscience, University of Padova (2013-2018).

PI of UNIPD unit: Innovative methods for water resources management under hydro-climatic uncertainty scenarios, funded by MIUR-PRIN for € 735000 - €106810 at the University of Padova (2013-2016).

PI of UNIPD unit: EU Framework Programme 7 Collaborative Project “CLIMB: Climate Induced Changes on the Hydrology of Mediterranean Basins: Reducing Uncertainty and Quantifying Risk through an Integrated Monitoring and Modeling System” Total funding from the European Commission € 3,149,641, of which € 176,775 for the Department of Geoscience, University of Padova (2010-2013).

PI -Transport phenomena in hydrological catchments: hydrological and geophysical experiments and modelling, University of Padova, in collaboration with the DMMMSA Department, the IMAGE Department and OGS Trieste, funded by Fondazione Cariparo, Padova, € 360,000 (2008-2011).

PI of UNIPD unit: EU Framework Programme 7 Collaborative Project “iSOIL - Interactions between *soil* related sciences – Linking geophysics, soil science and digital soil mapping” Total funding from the European Commission € 3,420,623, of which € 210,183 for the Department of Geoscience, University of Padova (2008-2011).

PI of UNIPD unit: EU Framework Programme 7 Collaborative Project “ModelPROBE - Model driven Soil Probing, Site Assessment and Evaluation”. Total funding from the European Commission € 3,397,609, of which € 290,981 for the Department of Geoscience, University of Padova (2008-2011).

Coordinator: Spectral induced polarization for the identification of organic contaminants in the subsoil, Università di Milano Bicocca and Università di Torino, funded by the Italian

Ministry for Research (programme MIUR-FIRB), € 100,000 (2004-2006).
Co-PI: In-situ tests for biodegradation of petroleum hydrocarbons in groundwater, Lancaster University, UK, funded by Natural Environment Research Council (NERC) UK, GBP 24,000 (2001-2003)

Tutoring activities

Supervisor or co-supervisor of 23 PhD students, 20 Post-docs

Awards and Recognitions

Golden Medal "Armando Norinelli" as "Best work in applied geophysics", University of Padua and National Research Council-GNGTS, Italy, 1991.
EAGE Mintrop Award (as co-author) for 2007 best paper in Near Surface Geophysics.
AGLC Award "Licio Cernobori" 2014 (as co-author) for the best paper presented by a young researcher at the 33rd GNGTS congress.

**Editorial and Review activity
(excerpts)**

Associate Editor of Near Surface Geophysics (since 2007), SERRA (2001-2011), BGTA (2008-2015). Reviewer for a number of top international journals such as Geophysics, Journal of Applied Geophysics, Geophysical Research Letters, Mathematical Geology, Water Resources Research, Advances in Water Resources, Journal of Hydrology, Surveys in Geophysics, Engineering Geology, Journal of Geophysical Research, Environmental Science and Technology, Hydrology and Earth System Sciences (HESS), Geophysical Journal International, Geoderma.

**Invited presentations
(relevant excerpts)**

Keynote Speech, Special Session on advanced geophysical imaging of plant-soil interactions, EAGE Near Surface Geoscience Conference & Exhibition 2021, Bordeaux, France, August 29- September 2, 2021.
SIAM Conference on Mathematical & Computational Issues in the Geosciences (GS21), invited presentation, June 21-24, 2021 (Virtual Conference).
Keynote speech, ESOF2020, Trieste, 2 September 2020.
Keynote speech, SEG-EAGE Geophysical Aspects of Smart Cities Workshop, Singapore, December 10-12, 2019.
Invited talk, EGU General Assembly 2018, Session 'Hydrogeophysics for the critical zone, Vienna, 8-13 April 2018.
Invited talk, GELMON 2017, Fourth International Workshop on Geoelectrical Monitoring, Vienna, November 22-24, 2017.
Invited talk, SEG 4th International Conference on Engineering Geophysics (ICEG), Al Ain, UAE, October 10, 2017.
Invited talk, AGU Fall Meeting, San Francisco, 12-16 December 2016.
Keynote speech, session Hydrogeophysics, remote sensing, and radar technologies: innovative tools and recent development, 42nd International IAH Congress "Aqua2015", Rome, September 13-18, 2015.
Lectio Magistralis, invited, GNGTS – 33° Congresso Nazionale, Bologna, 25-27 novembre 2014.

Two invited talks, AGU Fall Meeting, San Francisco, 9-13 December 2013.

Research

Geophysical methods for environmental applications, with particular regard to the characterization of hydrological systems and contaminated sites from the geological, hydrological and contamination viewpoints. Methods of choice are Electrical Resistivity Tomography (ERT) and Ground Penetrating Radar (GPR), especially in borehole and cross-borehole configuration. Novel Spectral Induced Polarization (SIP) and micro-gravimetric time-lapse methods are currently under development.
Geophysical methods for the characterization of mountain slope sites, both from the geotechnical and hydrological viewpoints, with special focus on landslide prediction. Methods of choice are seismic methods – especially Surface Wave methods (MASW, MOPA) - ERT and GPR.
Seismological micro-scale zoning and other soil dynamics uses of exploration geophysics,

with particular reference to surface wave methods (MASW, MOPA).

Integration of hydrological modeling with evidence from geophysical methods and from classical hydrological measurements, both in the vadose zone and in the saturated zone, with the aim of calibrating the hydraulic and hydrological parameters of relevant geological formations.

Service

Founder and Coordinator of the Master of Sciences in *Geophysics for Natural Risks and Resources*, University of Padua (since 2020).

President of the Committee for the Italian National Scientific Habilitation 2021-2023, Geophysics Sector (04/A4).

Member of the Board of Directors of OGS – National Institute of Oceanography and Experimental Geophysics – 2015-2019.

Member of the Committee for the Italian National Scientific Habilitation 2016-2018, Geophysics Sector (04/A4), parallel Committee.

Secretary of the International Scientific Committee on Land Subsidence, promoted and funded by ENI-Divisione E&P, 2002-2006.

Patents

Boaga J. and G. Cassiani, 2013, patent “Single channel multi-directional geophone for the acquisition of vertical and horizontal soil motion”, University of Padua.

Boaga J., G. Censini and G. Cassiani, 2018, patent proposal “Boreholes for micro-scale 3D ERT applied to plant physiology, University of Padua.

ADDITIONAL INFORMATION

Publications

Total number of publications in peer-reviewed journals=150

H-index (Scopus)=39

Total number of citations in peer-review journals=4350

Total number of citations=5013

Total number of publications in journals in the first Scopus quartile: 110

1. Flores Orozco A., P. Ciampi, T. Katona, M. Censini, M. Petrangeli Papini, G.P. Deidda, **G. Cassiani**, 2021, Delineation of hydrocarbon contaminants with multi-frequency complex conductivity imaging, *Science of the Total Environment*, Vol.768, 144997, doi: 10.1016/j.scitotenv.2021.144997.
2. Mary B., D. Vanella, S. Consoli and **G. Cassiani**, 2019, Assessing the extent of citrus trees root apparatus under deficit irrigation via multi-method geo-electrical imaging, *Scientific Reports*, 9, 9913, doi: 10.1038/s41598-019-46107-w
3. Mary, B., Peruzzo, L., Boaga, J., Schmutz, M., Wu, Y., Hubbard, S. S., and **G. Cassiani**, 2018, Small scale characterization of vine plant root water uptake via 3D electrical resistivity tomography and Mise-à-la-Masse method, *Hydrol. Earth Syst. Sci.*, doi: 10.5194/hess-22-5427-2018.
4. Perri M.T., P. De Vita, R. Masciale, I. Portoghese, G.B. Chirico and **G. Cassiani**, 2018, Time-lapse Mise-à-la-Masse measurements and modelling for tracer test monitoring in a shallow aquifer, *Journal of Hydrology*, 561, 461-477, doi: 10.1016/j.jhydrol.2017.11.013
5. Vanella D., **G. Cassiani**, L. Busato, J. Boaga, S. Barbagallo, A. Binley, S. Consoli, 2018, Use of small scale electrical resistivity tomography to identify soil-root interactions during deficit irrigation, *Journal of Hydrology*, 556, 310-324, doi: 10.1016/j.jhydrol.2017.11.025.
6. **Cassiani G.**, J. Boaga, M. Rossi, G. Fadda, M. Putti, B. Majone, A. Bellin, 2016, Soil-plant interaction monitoring: small scale example of an apple orchard in Trentino, North-Eastern Italy, *Science of the Total Environment*, Vol. 543, Issue Pt B, pp. 851-861, doi: 10.1016/j.scitotenv.2015.03.113.
7. **Cassiani G.**, J. Boaga, D. Vanella, M. T. Perri, S. Consoli, 2015, Monitoring and

modelling of soil-plant interactions: the joint use of ERT, sap flow and Eddy Covariance data to characterize the volume of an orange tree root zone, *Hydrol. Earth Syst. Sci.*, 19, 2213-2225, doi:10.5194/hess-19-2213-2015.

8. Brovelli A. and **G. Cassiani**, 2011, Combined estimation of effective electrical conductivity and permittivity for soil monitoring, *Water Resources Research*, 47, W08510, doi:10.1029/2011WR010487.
9. **Cassiani, G.**, V. Bruno, A. Villa, N. Fusi, A.M. Binley, 2006, A saline tracer test monitored via time-lapse surface electrical resistivity tomography, *Journal of Applied Geophysics*, 59, 244-259, doi: 10.1016/j.jappgeo.2005.10.007.
10. Binley A.M., **G. Cassiani**, R. Middleton, and P., Winship, 2002, Vadose zone flow model parameterisation using cross-borehole radar and resistivity imaging, *Journal of Hydrology*, 267, 147-159.

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Padova, 27.05.2024

Signature