

PERSONAL INFORMATION

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EDUCATION AND TRAINING

2022–ongoing

PhD - Applied Geophysics

ISCED 8

DICEA, "Sapienza" University of Rome, Italy

Thesis title: "Machine Learning techniques for the quantitative assessment of environmental parameters from geophysical data"

2020–2022

M.Sc. - Environmental Engineering

ISCED 7

DICEA, "Sapienza" University of Rome, Italy

Final grade: 110/110 with distinction

Thesis work - Environmental Geophysics: "Machine Learning techniques applied to monitoring landfills leachate levels through geophysical surveys"

2016–2019

B.Sc. - Energy Engineering

ISCED 6

DIAEE, "Sapienza" University of Rome, Italy

Thesis work - SIASE: "The control of CO2 emissions from thermoelectric power plants"

2011–2016

Scientific High School graduation

ISCED 3

Liceo statale "Terenzio Mamiani", Rome, Italy

WORK EXPERIENCE

Jun 2024 – ongoing

Researcher

CNR, IGAG, Italy

Research contract entitled: "Morphobathymetric study of the riverbed of the Tiber from North Rome to the river mouth area" Scientific Responsible: Dott. A. Bosman

Feb 2023 – May 2024

Researcher

DICEA, "Sapienza" University of Rome, Italy

Research contract entitled: "Development of Machine Learning algorithms for geophysical data integration for environmental applications" Scientific Responsible: Prof. G. De Donno

PUBLICATIONS

Peer reviewed ISI papers

- [1] Piegari, E., De Donno, G., **Melegari, D.**, Paoletti, V. 2023, A machine learning-based approach for mapping leachate contamination using geoelectrical methods. Waste Management, 157, 121-129.
doi: 10.1016/j.wasman.2022.12.015
- [2] De Donno, G., Cercato, M., **Melegari, D.**, Paoletti, V., Penta de Peppo, G., Piegari, E. 2024, Fuzzy mapping of integrated multi-parameter tomographic data to detect and localize geophysical targets. IEEE Transactions on Geoscience and Remote Sensing, vol. 62, pp. 1-11.
doi: 10.1109/TGRS.2024.3445462
- [3] De Donno, G., **Melegari, D.**, Paoletti, V., Piegari, E. An integrated study of hard and soft cluster analyses for detecting leachate in a MSW landfill site using geoelectrical data. Waste Management (submitted, 26/10/2024 peer review process completed)

ISI book chapter

- [1] Electrical and Electromagnetic Prospecting for the Characterization of Municipal Waste Landfills: A Review
Piegari, E., De Donno, G., **Melegari, D.**, Paoletti, V.
Technical Landfills and Waste Management: Volume 1: Landfill Impacts, Characterization and Valorisation, 1-29. Springer Water. Springer, Cham. 2024
doi: 10.1007/978-3-031-52633-6_1

Selected abstracts and contributions to international conferences

- [1] ERT and TDIP survey for mapping of leachate plumes: application to a MSW landfill in Italy
Melegari, D., De Donno, G.
30th European Meeting of Environmental and Engineering Geophysics, Held at Near Surface Geoscience Conference and Exhibition 2024, NSG 2024, 8-12 Sep 2024, Helsinki, Finland.
doi: 10.3997/2214-4609.202420054
- [2] Characterization of a coastal aquifer prone to saline intrusion through integration of electrical and seismic data
Cercato, M., De Donno, G., **Melegari, D.**, De Peppo, G.P.
2nd Conference on Hydrogeophysics 2023, Held at Near Surface Geoscience Conference and Exhibition 2023, NSG 2023, 3-7 Sep 2023, Edinburgh, Scotland.
doi: 10.3997/2214-4609.202320043

SPEAKER

- 15 Feb 2024 Quantitative integration of geoelectrical data for mapping of leachate plumes: application to a MSW landfill in Central Italy
Melegari, D., De Donno, G., Piegari, E.
42 GNGTS National Conference (OGS), Ferrara, Italy
- 4 Oct 2023 Clustering of geoelectrical data for imaging leachate accumulation in municipal solid waste landfills
Melegari, D., De Donno, G., Piegari, E.
BeGeo 2023, 2° Conference of Young Geoscientists, Naples, Italy
- 9 Feb 2023 Characterization of a coastal aquifer prone to saline intrusion at the Circeo National Park (LT) through inversion of ERT, TDIP and MASW data
Cercato, M., De Donno, G., **Melegari, D.**, Maggiamo, S., De Peppo, G.P.
41 GNGTS National Conference (OGS), Bologna, Italy

INTERNATIONAL WORKSHOP

- 28-30 May 2024 ERT and TDIP survey for mapping of leachate plumes: Application to a MSW landfill in Italy
Melegari, D., De Donno
7th International IP workshop, Lund, Sweden
- 18-22 September 2023 INSINPROG@Lario 2023
International School on Inverse Problems in Geophysics, Lake Como School of Advanced Studies, Como, Italy

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	B2	B2	B2	B2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Computer skills

- Knowledge of both Windows and macOS based OSs
- Proficiency with the following programming language: MATLAB, Python.

Membership

- European Association of Geoscientists and Engineers (EAGE)
- European Geosciences Union (EGU)
- EAGE-Society of Exploration Geophysicists Italian Section (EAGE-SEG)

DICHIARAZIONE

Il presente curriculum vitae, è redatto ai fini della pubblicazione nella Sezione "Amministrazione trasparente" del sito web istituzionale dell'Ateneo al fine di garantire il rispetto della vigente normativa in materia di tutela dei dati. Il C.V. in versione integrale è conservato presso gli Uffici della Struttura che ha conferito l'incarico. Il sottoscritto Davide Melegari dichiara di essere consapevole che il presente curriculum vitae sarà pubblicato sul sito istituzionale dell'Ateneo, nella Sezione "Amministrazione trasparente", nelle modalità e per la durata prevista dal d.lgs. n. 33/2013, art. 15.

Roma 4/11/24