# Dr. Daniele la Cecilia

*Curriculum Vitae*

**Soft Skills**

Team work and empathy
Self-confidence and self-Awareness
Growth mindset and willing to learn
Stress management, persistence and perseverance

**Research Interest**

Anthropogenic stressors to the environment, Soil and Water resources protection, Environmental modeling, Remote sensing, Bioremediation, Agrochemicals, Sustainability, Ecotoxicity

**Professional working experience**

| Date | Role | Activity(ies) |
|---|---|---|
| 01/04/2015 – 31/12/2015 | Environmental researcher, EURAC Research, Bolzano, Italy. | In the context of the **MONALISA project**, I had been (a) **monitoring** key environmental parameters including Soil Water Content, Normalized Difference Vegetation Index, and soil properties in the Alpine environment for many purposes, (b) **programmatically georeferencing and geospatializing** nearly 20,000 agricultural soil samples each containing more than 20 attributes. |
| 01/12/2014 – 31/03/2015 | Environmental researcher, Zanasi & Partners, Modena, Italy. | I was involved in the **CWIT (Countering WEEE Illegal Trade)** research project funded by the European Commission. I gathered environmental intelligence and researched on technologies to prevent the illicit traffic of electric and electronic wastes. |
| 01/08/2014 – 31/12/2014 | Trainee, CIRF (Italian center for river restoration), Advisor: Marco Monaci, Modena, Italy. | We facilitated the **liaison process between stakeholders** and local authorities in order to find a solution to better manage the water resource. |

**Professional academic experience**

| Date | Role | Activity(ies) |
|---|---|---|
| 01/05/2022 – 30/04/2023 | Post-Doc, eawag aquatic research, Switzerland | Demonstrate **Nature Based Solutions** for River Restoration in the context of the EU-funded **RECONECT** project |

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| 01/11/2019 – 30/04/2022 | Post-Doc, eawag aquatic research, Switzerland | (-) **Analysis** of high- and low-frequency **Time-series** of pesticides and transformation products in agricultural streams<br>(-) **Target field campaigns** for process understanding<br>(-) Collaborator in the maintenance of the Büel research station in the Rietholzbach catchment (Switzerland)<br>(-) Machine learning applied on Sentinel-2 satellite images for innovative land use classification |
| 13/02/2019 – 30/10/2019 | Research scientist, The University of Sydney, Sydney, Australia. | (-) **Modelling** pesticides fate and biodegradation in soil at global scale;<br>(-) **Compilation of global datasets** for environmental modelling |
| 01/08/2018 – 16/07/2019 | Collaborator, The Coleman Lab: Environmental Microbiology and Biotechnology, Sydney, NSW, Australia. | (-) **Assessed** the capability of environmental bacteria to **biodegrade** the herbicide glyphosate and its metabolite amino-methyl-phosphonic acid (AMPA). |
| 13/02/2019 – 16/03/2019 | Visiting Scholar, Politecnico di Milano, Milano, Italy. | (-) Finalized a collaborative **research article** and submitted to the journal *Ecological Indicators*.<br>(b) Prepared the **poster presentation** for the "*Joint EFSA-BfR international conference on uncertainty in risk analysis*". |
| 01/08/2018 – 30/11/2018 | Hydrology Tutor, The University of Sydney, Sydney, Australia. | **Guide students** to apply theoretical knowledge to solve problems in academic classrooms. |
| 01/05/2018 – 31/05/2018 | Visiting Scholar, Politecnico di Milano, Milano, Italy. | (-) Finalized a collaborative **research article**, which has been published on the journal *Advances in Water Resources"*;<br>(-) prepared the **oral presentation** for CMWR2018;<br>(-) submitted a **research proposal** for the Barilla Center for Food & Nutrition. |
| 01/08/2017 – 30/11/2017 | Humanitarian Engineering Tutor, The University of Sydney, Sydney, Australia. | **Guide students** to apply theoretical knowledge to solve problems in academic classrooms and assist them in the **virtual reality** laboratory. |
| 01/08/2017 – 30/11/2017 | Hydrology Tutor, The University of Sydney, Sydney, Australia. | **Guide students** to apply theoretical knowledge to solve problems in academic classrooms. |
| 01/08/2016 – 30/11/2016 | Hydrology Tutor, The University of Sydney, Sydney, Australia. | **Guide students** to apply theoretical knowledge to solve problems in academic classrooms. |
| 01/09/2013 – 28/02/2014 | Visiting Scholar, Boston University, Boston, Massachusetts, USA. | I completed my **Master's thesis abroad** where we investigated the consequences of the alteration of the |

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| | | hydrologic regime to swamp vegetation by means of satellite images, which resulted in a **scientific publication** in *Adv. Wat. Resour*. |

**Education**

| Date | Role | Activity(ies) |
|---|---|---|
| 01/03/2016 – 13/02/2019 | PhD Student, The University of Sydney, School of Civil Engineering, SYD, AUS. | My research focused on how and to what extent agrochemicals interfere with biogeochemistry processes in agricultural soils and to carry out laboratory experiments to isolate biodegraders of the herbicide glyphosate from soil samples. |
| 24/02/2012 – 27/10/2014 | Master Degree (Final grade 104/110), University of Trento, Department of environmental engineering, Trento, Italy. | Team-based projects: River Engineering, Estimation of Peak Flood Discharge for the Noce River, Flood hazard assessment and its Management, Morphodynamics and sediments transport.<br>Individual projects: Advanced numerical modelling; Waterworks and Drainage Systems; Pollutants dispersion modelling in the Adige River. |
| 01/09/2012 – 31/01/2013 | ERASMUS Exchange program, University of Aberdeen, Aberdeen, Scotland, UK. | As a student I attended and passed the following pertinent classes: River Ecosystems and Management, Coastal and Estuarine Environments, Signal analysis, Geotechnics. |
| 01/09/2008 – 23/02/2012 | Bachelor Degree (Final grade 102/110), University of Trento, Department of environmental engineering, Trento, Italy. | Individual project: Hydrological characterization of the Noce River.<br>Team-based project: GIS as a Landslide Risk Prediction Tool. |
| 01/09/2004 – 01/07/2008 | High School (Final grade 100/100), ITAS Selmi Biologico, Modena, Italy. | Life cycle assessment, Environmental issues due to ceramic industry and Management, Chemistry, Biology, Ecology, Biochemistry (Internship at University of Modena and Reggio Emilia. Advisor: Giulia Di Rocco, Modena, Italy.). |

**Peer-reviewed publications**

1) Cit. 1 - **Daniele la Cecilia**, Anne Dax, Heinz Ehmann, Margie Koster, Heinz Singer, Christian Stamm, (2021). Continuous high-frequency pesticide monitoring to observe the unexpected and the overlooked, Water Research X, 13, 100125 **OPEN ACCESS**
2) Cit. 3 - **Daniele la Cecilia**, Federico Maggi, (2020). Influential sources of uncertainty in glyphosate biochemical degradation in soil, Mathematics and Computers in Simulation, 175, 121-139
3) Cit. 0 – Fiona H.M. Tang, **Daniele la Cecilia**, R. Willem Vervoort, Nicholas V. Coleman, Chris Conoley, Federico Maggi, (2019). A simple pre-factor for contaminant biodegradation potential and its application to pesticides risk assessment, *Mathematics and Computers in Simulation*.
4) Cit. 7 - **Daniele la Cecilia**, Giovanni M. Porta, Fiona H.M. Tang, Monica Riva, Federico Maggi, (2020). Probabilistic indicators for soil and groundwater contamination risk assessment, Ecological Indicators, 115, 106424
5) Cit. 35 - Federico Maggi, **Daniele la Cecilia**, Fiona H.M. Tang, Alexander McBratney, (2020). The global environmental hazard of glyphosate use, Science of The Total Environment, 717, 137-167
6) Cit. 49 – Federico Maggi, Fiona H.M. Tang, **Daniele la Cecilia**, Alexander McBratney, (2019). PEST-CHEMGRIDS, global gridded maps of the top 20 crop-specific pesticide application rates from 2015 to 2025. *Scientific data*. 6, 170. **OPEN ACCESS**
7) Cit. 3 - Stefano Della Chiesa, Giulio Genova, **Daniele la Cecilia**, Georg Niedrist, (2019). Phytoavailable phosphorus (P2O5) and potassium (K2O) in topsoil for apple orchards and vineyards, South Tyrol, Italy. Journal of Maps. 15, 555-562. **OPEN ACCESS**
8) Cit. 6 - Stefano Della Chiesa, **Daniele la Cecilia**, Giulio Genova, Andrea Balotti, Martin Thalheimer, Ulrike Tappeiner, Georg Niedrist, (2019). Farmers as data sources: Cooperative framework for mapping soil properties for permanent crops in South Tyrol (Northern Italy), Geoderma, 342, 93-105. **OPEN ACCESS**
9) Cit. 8 - **Daniele la Cecilia**, William J. Riley, Federico Maggi, (2018). Biochemical modelling of microbial memory effects and catabolite repression on soil organic carbon compounds, Soil Biology and Biochemistry, 128, 1-12.
10) Cit. 14 - **Daniele la Cecilia**, Fiona H.M. Tang, Nicholas V. Coleman, Chris Conoley, R. Willem Vervoort, Federico Maggi, (2018). Glyphosate dispersion, degradation, and aquifer contamination in vineyards and wheat fields in the Po Valley, Italy, Water Research, 146, pp. 37-54.
11) Cit. 12 - Giovanni Porta, **Daniele la Cecilia**, Alberto Guadagnini, Federico Maggi, (2018). Implications of uncertain bioreactive parameters on a complex reaction network of atrazine biodegradation in soil, Advances in Water Resources, 121, pp. 263-276, 10.1016/j.advwatres.2018.08.002
12) Cit. 37 - **Daniele la Cecilia** and Federico Maggi, (2018). Analysis of glyphosate degradation in a soil microcosm, Environmental Pollution, 233, pp. 201-207, 10.1016/j.envpol.2017.10.017
13) Cit. 10 - **Daniele la Cecilia** and Federico Maggi, (2017). In-situ atrazine biodegradation dynamics in wheat (Triticum) crops under variable hydrologic regime, Journal of Contaminant Hydrology, 203, pp. 104-121, 10.1016/j.jconhyd.2017.05.004
14) Cit. 22 - **Daniele la Cecilia** and Federico Maggi, (2016). Kinetics of atrazine, deisopropylatrazine, and deethylatrazine soil biodecomposers, Journal of Environmental Management, 183, pp. 673-686, 10.1016/j.jenvman.2016.09.012
15) Cit. 5 - Federico Maggi and **Daniele la Cecilia**, (2016). Implicit Analytic Solution of Michaelis–Menten–Monod Kinetics, ACS Omega, 1, pp. 894-898, 10.1021/acsomega.6b00174
16) Cit. 11 - **Daniele la Cecilia**, Marco Toffolon, Curtis E. Woodcock, Sergio Fagherazzi, (2016). Interactions between river stage and wetland vegetation detected with a Seasonality Index derived from LANDSAT images in the Apalachicola delta, Florida, Advances in Water Resources, 89, pp. 10-23, 10.1016/j.advwatres.2015.12.019

**Practitioner articles**

1) la Cecilia, D., Dax, A., Schönenberger, U., Koster, M., Konz, N., Minkowski, C., Singer, H., Stamm, C. (April 2022). Identifizierung von Transportprozessen von Pflanzenschutzmitteln in Gewässer anhand von Monitoringstudien, Aqua & Gas.
2) Dax, A., Stravs, M., Stamm, C., Ort, C., la Cecilia, D., & Singer, H. (2020). MS2Field: Mikroverunreinigungen mobil messen. Zeitlich hochaufgelöste messungen zeigen realistisches ausmass akuter gewässerbelastungen. Aqua & Gas, 12, 14-19.

**Invited presentations** to internationally established conferences and/or international advanced schools.

1) PEAK Course A47/21, Erfassung der Pestizidbelastung in Oberflächen- und Grundwasser, 22. September 2021, AKADEMIE Empa Eawag Campus, Dübendorf

**Conferences**.

1) 31/08/2022 Presenter at York 2022 - Pesticide behaviour in Soils, Water and Air.
2) 25-30/04/2021 Online presenter at EGU 2021
3) 04-08/05/2020 Online presenter at EGU 2020
4) 20-22/02/2019 Poster presenter at Joint EFSA-BfR international conference on uncertainty in risk analysis, Berlin, Germany.
5) 3-7/12/2018 Presenter at XXII Computational Methods in Water Resources (CMWR), Saint-Malo, France.
6) 3-8/12/2017 Presenter at 22nd International Congress on Modelling and Simulation (MODSIM2017) in Hobart, Tasmania, Australia.
7) I have co-authored >10 conference articles (AGU, CMWR, EGU, Interpore, MODSIM).

**Organisation of international conferences** in your field(s) of research, including membership in the steering and/or programme committee

1) 03/04/2021 – 08/04/2022 Co-chairing at the European Geosciences Union the session on Micropollutants and pathogens in the soil-groundwater-river continuum: modeling and monitoring.
2) 25/04/2021 – 30/04/2021 Co-chairing at the European Geosciences Union the session on Micropollutants and pathogens in the soil-groundwater-river continuum: modeling and monitoring.

1) 04/05/2020 – 02/04/2022 Member of the European Geosciences Union
2) 03/08/2017 – 30/11/2019 Member of Modelling and Simulation (MODSIM2017).

**Prizes and Awards**.

1) 13/07/2021 – **Academic Transition Grant** issued by **Eawag aquatic research** to carry out my own research project on the application of machine learning and deep learning on Sentinel 2 images to localise plastic tunnels and greenhouses over space and time.
2) 01/05/2018 - **Postgraduate Research Support Scheme: Travel grant** issued by **The University of Sydney** to attend **CMWR2018** and present: "Propagation of ecohydrological uncertainty in a complex biogeochemical network of glyphosate dispersion and degradation".
3) 01/12/2017 - **Postgraduate Research Support Scheme: Travel grant** issued by **The University of Sydney** to attend MODSIM2017 and present: "Stochastic sensitivity analysis of glyphosate biochemical degradation".
4) 01/06/2017 to 31/05/2018 - **Top-up Scholarship** issued by **Dr. Federico Maggi** to **support the development** of the Research/Sydney Research Excellence Initiative 2020 (SREI) “A new paradigm: dynamic microbe-centric environmental risk assessment led by Maggi F, Tang F, Coleman N, Vervoort R.
5) 01/03/2016 to 13/02/2019 - **University of Sydney International Scholarship (USydIS)** issued by **The University of Sydney** to undertake my **PhD studies**.
6) 27/10/2014 - **Premio di merito per il corso di laurea magistrale** issued by **Università degli Studi di Trento** received for the outstanding career as Master student.