NAPOLITANO LISA

Junior Researcher

Padova, Italy

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WORK EXPERIENCE

June 2025 – present: **Junior Researcher,** Institute for Climate Resilience (ICR) - division of Soil and Water Systems (SOWAS) - CMCC Foundation (Euro-Mediterranean Centre on Climate Change)

June 2023 – May 2025: **Junior Researcher,** Institute for Climate Resilience (ICR) - division of Regional Models and geo-Hydrological Impacts (REMHI) - research unit: "ADAPTATION ENGINEERING" - CMCC Foundation (Euro-Mediterranean Centre on Climate Change)

Main research topics:

- Hydrological modelling: development and application of models for runoff and flood prediction
- Assessment of climate change impacts on geo-hydrological hazards (in particular floods in both urban and natural contexts)
- Extreme value analysis for extreme rainfall events and associated flooding
- Water resources management: investigating climate change impacts and implementing risk management strategies for water resources
- Design and management of hydraulic structures (designing, managing hydraulic structures and drainage systems, and implementing adaptation measures)

National and International research projects:

- TheHuT (The Human-Tech Nexus)
- ACQUAOUNT (Adapting to Climate change by QUantifying optimal Allocation of water resOUrces and socio-ecoNomic inTerlinkages)
- bePrepARed (Preparing, Adapting, Reconstructing: actions to promote climate change adaptation and risk disaster resilience in Italian and Croatian sensitive ecosystems)
- NBFC (National Biodiversity Future Center)

Presentations:

- "Development of an integrated suite for estimating Intensity Duration Frequency curves in a climate change perspective", **Lisa Napolitano**, Guido Rianna, Roberta Padulano, and Valentina Francalanci (https://doi.org/10.5194/egusphere-egu24-15132) during EGU General Assembly 2024, PICO session: Regional and Global Hydrological Changes in a Changing Climate

Posters:

- "Updating IDF curves in the context of climate change: approaches, limitations, and uncertainty assessment", Guido Rianna, Adriana Gomez, **Lisa Napolitano**, Roberta Padulano at 6th International Conference on Advances in Extreme Value Analysis and Application to Natural Hazards - EVAN Conference 16-19 July 2024, Istituto Veneto di Scienze, Lettere ed Arti, Venice

Papers:

- Quantile-based bias-correction of extreme rainfall: Pros & cons of popular methods for climate signal preservation, R. Padulano, L.A. Gomez-Mogollon, **L. Napolitano**, G. Rianna, Journal of Hydrology, Volume 653, 2025, 132814, ISSN 0022-1694, https://doi.org/10.1016/j.jhydrol.2025.132814

July 2021 – May 2023: **Technical Officer, Department of Flood Risk Planning and Protection - Applied Hydrology, Autorità di Bacino distrettuale delle Alpi Orientali (AAWA)** - Palazzo Michiel Dalle Colonne, Cannaregio 4314, 30121, Venice (VE)

Main duties and responsibilities:

- Management of environmental data of competence of the Flood Risk Planning and Protection department, with reference to hydrology and hydraulics applied to the plain area
- Operational management of the technologies necessary for functioning of the Citizens' Observatory on Flood (on-line platform, website and mobile app)
- Hydrological and hydraulic modelling as part of the update of the Flood Risk Management Plan
- Instruction of procedure concerning the request to update the Flood Risk Management Plan
- Active participation in European research projects under the European Framework Program for Research and Innovation (2014 - 2022) HORIZON 2020 (Xr4Drama, aqua3S, WQeMS) and INTERREG (VISFRIM)

Proceedings of international conferences:

- M. Ferri, F. Lombardo, D. Norbiato, R. Fiorin, M. Monego, **L. Napolitano**. 082 – Machine learning techniques and Big Data analysis for flood risk management, assessment of droughts and other extreme climate events: different approaches https://sites.unica.it/stahy2022/programme/poster/ STAHY2022 - 12th International Workshop on Statistical Hydrology 17 – 20 September 2022, Chia, Sardinia (Italy)

October 2018 – July 2021: **Environmental Engineer at Idrostudi s.r.l.** - Area Science Park, Padriciano 99, 34149, Trieste (TS)

Main duties and responsibilities:

- Hydrological and hydraulic modelling
- Elaboration of pre- and post-construction hydraulic models (1D and 2D) of watercourses for hydraulic risk analysis
- Hydraulic modelling (1D and 2D) of urban drainage network

Main works executed:

- Sewerage network survey service, storm water overflow control, georeferencing and identification of sewerage system connections, 2D hydraulic modelling and network monitoring of the Municipalities of Ostiglia, Carbonara di Po, Borgo Virgilio, San Giorgio Bigarello and Curtatone. Client: Tea Acque
- Implementation of the Integrated Sewage Plan of the networks of the Brianzacque s.r.l. district - "Adjustment programme of sewers and storm water overflow". Client: Brianzacque
- Specialized engineering activities for the elaboration of the sewerage network plan of the municipalities of Busseto, Colorno, Fidenza, Fontanellato, Polesine Zibello, Roccabianca, San Secondo Parmense, Soragna and Torrile, through hydraulic modelling. Client: Emiliambiente
- Hydraulic study of Meduna River. Client: Sintagma
- Hydraulic study of the Varaita River using two-dimensional modelling in unsteady flow conditions preparatory to the design of the embankment completion works to defend the town of Villanova Solaro. Client: AIPO, Interregional Agency for the Po River
- Hydraulic and hydrological study requested in the tender documentation for the reconstruction of the Mirafiori tunnel crossing the Trebbia River in the municipality of Rivergaro and Gazzola (PC) promoted by the Consortium for Reclamation of Piacenza. Client: I.CO.P.
- Mathematical modelling service of the Piovene Rocchette sewerage network. Client: Viacqua
- Hydrological and hydraulic study of watercourses as part of Final Project of the new Palermo – Catania railway line. Client: Sintagma Engineering – Perugia, Italferr – FS Italiane

- Hydrological and hydraulic study of the Tittadegna River as part of the upgrading and electrification of the Barletta – Canosa di Puglia line. Client: Italferr - FS Italiane
- Fluidynamic simulation of the sewerage network of the municipality of Chiavari. Client: IRETI
- Hydraulic study of the industrial area of the municipality of Brendola (VI). Client: Acque del Chiampo

EDUCATION

2018: **State examination and licensed as a professional engineer at Alma Mater Studiorum – University of Bologna (Italy) – section A – civil and environmental sector**.

September 2015 - March 2018: International Master's Programme – **Second Cycle Degree in Environmental Engineering (Earth Resources Engineering)** at Alma Mater Studiorum – University of Bologna, Italy - Master thesis: Analysis and implementation of high-resolution precipitation data in urban drainage modelling.

January - July 2017: **Visiting MSc. student under Erasmus programme** - Universidade de Aveiro, Portugal.

July 2016: **Erasmus+ mobility program - Riverwalk 2016**: organized by WWF Austria, WWF Trieste, the National Institute for Nature Conservation in Albania (INCA) and the Slovenian Leeway Collective Association (LWC).

September 2012 - October 2015: **Bachelor's Degree in Environmental Engineering** at Alma Mater Studiorum – University of Bologna, Italy - Thesis: La gestione sostenibile delle acque nel bacino transfrontaliero dell'Isonzo.

LANGUAGE SKILLS

Mother tongue: ITALIAN

Languages	Listening	Reading	Writing
ENGLISH	B2	B2	B2
PORTOGUESE	A2	A2	A2

DIGITAL SKILLS

Excellent skills in:

- HEC-HMS software
- QGIS software
- Programming languages: R
- GlobalMapper
- MIKE Urban
- InfoWorks ICM software
- SWMM software
- AutoCAD
- Microsoft Office package (Excel, Word and PowerPoint)

Good skills in:

- HEC-RAS software
- Epanet
- Basement
- Programming languages: Python, SQL

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Padova, 15/05/2025