

PERSONAL INFORMATION

Roberta Padulano



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WORK EXPERIENCE

01/06/2018–Present

Researcher

CMCC Foundation (Euro-Mediterranean Centre on Climate Change)

<https://www.cmcc.it/it/>

Cooperation with the REMHI (Regional Models and geo-Hydrological Impacts) and IAFES (Impacts on Agriculture, Forests and Ecosystem Services) divisions.

Analysis of climate change impacts on geo-hydrological hazards, with particular regard towards flood events in both urban and natural contexts. Specific research topics include, but not limit to, extreme value analysis for extreme rainfall and flood estimation, urban flood modelling, hydraulic hazard evaluation, design and management of hydraulic structures, drainage systems and adaptation measures, probability- and I.A.-based pattern detection, water demand modelling (see list of papers).

Scientific contribution to local, national and international projects involving the development and/or exploitation of climate data, information and services for the estimation of climate and climate change impacts at the local/regional scale (see list of projects).

Business or sector Hydraulic Engineering, Environmental Engineering, Probability and Statistics

15/11/2018–31/05/2019

Research Consultant

Venice International University (VIU)

Venice (Italy)

Scientific contribution within the “Methodology of quantification of indirect financial losses from natural disasters” project commissioned by World Bank Group. Specific activities concerned desktop review, data collection/analysis and reporting about direct and indirect flood losses in OECD and non-OECD Countries.

Business or sector Hydraulic Engineering, Environmental Engineering, Probability and Statistics

01/06/2017–31/05/2018

Post-Doc Grant

Università degli Studi di Napoli Federico II - DICEA

Via Claudio 21, 80125 Naples (Italy)

<http://www.dicea.unina.it/>

Research activity concerning urban water demand modelling with machine learning techniques, in cooperation with the municipal Authority in charge of the water distribution network management in the City of Naples. Specific research topics include (see list of papers) anomaly detection and outlier detection techniques, clustering and classification of seasonal water demand patterns, unsupervised clustering of daily water demand patterns by Self-Organizing Map, scaling laws for daily water demand.

Business or sector Hydraulic Engineering, Environmental Engineering, Probability and Statistics

01/10/2016–30/11/2016

Research Fellow

Università degli Studi di Napoli Federico II - DICEA

Via Claudio 21, 80125 Naples (Italy)

<http://www.dicea.unina.it/>

I was part of a research team cooperating with the municipal Authority in charge of the local water distribution network management. I conducted research activity focused on the urban water demand characterization and leak reduction.

Business or sector Hydraulic Engineering, Environmental Engineering, Probability and Statistics

30/05/2016–30/07/2016

Research Fellow

Università degli Studi di Napoli Federico II - DICEA
Via Claudio 21, 80125 Naples (Italy)
<http://www.dicea.unina.it/>

I was part of a team of researches and professionals cooperating with the Municipality of Pozzuoli (Naples, Italy) to the retrofitting of the drainage network of Parco Russo (Pozzuoli). My main task consisted in the hydrological modelling of the system.

Business or sector Hydraulic Engineering, Environmental Engineering

15/12/2015–15/01/2016

Professional Consultant

Interprogetti srl

HEC-GeoRAS and HEC-RAS modelling and routing of river network for the final design stage of Deviante Tratta da Vestone Nord a Idro Sud (Strada Provinciale BS 237 “del Caffaro”).

01/10/2015–31/10/2015

Research Fellow

Università degli Studi di Napoli Federico II - DICEA
Via Claudio 21, 80125 Naples (Italy)
<http://www.dicea.unina.it/>

I was part of a team of researchers and professionals cooperating with the Municipality of Pozzuoli (Italy) to the drafting of the Municipal Civil Protection Plan. My task concerned the assessment of hydraulic risk scenarios; to perform this I gained skills in the use of the ArchHydro Toolbox for ArcMap.

Business or sector Hydraulic Engineering, Environmental Engineering

29/04/2014–29/05/2015

Research Fellow

Università degli Studi di Napoli Federico II - DICEA
Via Claudio 21, 80125 Naples (Italy)
<http://www.dicea.unina.it/>

One of eight participants of the 2014-2015 education and research project Be&Save-Aquasystem-Siglod, a research project funded by the European Community. The activities consisted in 600 hours of courses at the Department of Civil, Architectural and Environmental Engineering, and 1000 hours of training at Acqua Bene Comune (ABC) Napoli, which is the Authority in charge of water distribution in the city of Naples. The courses allowed me to strengthen my knowledge and skills in the field of Hydraulic Structures, Water Management and System Engineering, whereas at ABC I was able to undertake a vulnerability analysis of Naples water distribution network.

Business or sector Hydraulic Engineering, Probability and Statistics

EDUCATION AND TRAINING

01/03/2011–15/05/2014

Ph.D. in Hydraulic and Environmental Engineering

EQF level 8

Università degli Studi di Napoli Federico II - DICEA
Via Claudio 21, 80125 Naples (Italy)
<http://www.dicea.unina.it/>

- I personally conducted data elaboration for a novel diversion structure in supercritical flow conditions; I designed, conducted and processed experiments on a vertical drop shaft with a square-edged horizontal intake. With this aim I performed a detailed state-of-the-art review about drop and diversion hydraulic structures, and I treated experimental data with Matlab, Microsoft Excel and Surfer computer programs. The title of my Ph.D. thesis is “Experimental investigation of drop and diversion structures for urban drainage systems”, in Italian.

- I devoted myself also to different research lines in the fields of Hydrology and Urban Drainage Systems. I conducted a regional analysis concerning the runoff coefficient prediction in Southern Italy for the estimation of index floods; with this aim I enhanced my skills with ArcGIS and with the Statistical Toolboxes of Matlab. With the same tools I performed a vulnerability analysis of Naples City combined drainage system, to obtain a novel tool for a prioritization strategy of sewers ordinary maintenance for the Municipal Authority. I was part of a research group that focused on the largest drainage subsystem of Naples combined network, developing a VBA interface that performs identification analysis and calibration of a rainfall-runoff model using EPA-SWMM for the main channel flow routing and GANetXL genetic algorithm as the optimization tool. A collateral activity to the realization of the VBA interface was the implementation of a Seasonal-Trend-decomposition-based-on-Loess VBA routine to obtain information about wastewater, basing on wastewater time series.
- I was a teaching assistant for several Bachelor and Master Courses, such as Hydrology and Design and Management of Water Distribution Systems.
- I was co-supervisor of several Bachelor and Master Theses.
- I enhanced my skills in the fields of Statistics, Hydrology, Hydraulics and Hydraulic Structures.

22/10/2007–10/06/2010

Master’s Degree in Environmental Engineering, with honour

EQF level 7

Università degli Studi di Napoli Federico II, Naples (Italy)

- I put the basis of a regional study concerning the runoff coefficient prediction in Southern Italy for the estimation of index floods. With this aim I performed an in-depth state-of-the-art review about climatic factors influencing the transformation of rainfall into runoff and I used them to predict the runoff coefficient for Southern Peninsular Italy; doing so I gained skills regarding spatial interpolation techniques with ArcGIS and statistical regression techniques with Matlab. The title of my Master thesis is “Influence of climatic factors on the runoff coefficient”.
- I enhanced my skills in the fields of River Engineering, Hydraulic and Maritime Structures, Hydrology, River Catchment Management, Geotechnics and Retaining Structures, Geology and Hydrogeology.

01/11/2004–22/10/2007

Bachelor’s Degree in Environmental Engineering, with honour

EQF level 6

Università degli Studi di Napoli Federico II, Naples (Italy)

- I was part of a course program focusing on the use of Bioengineering techniques (Environmental Engineering techniques using plants and plant-related structures) to prevent from hydrogeological instabilities. With this aim I worked for a week within an educational construction site to realize several applications using wood, stone and plants to prevent instabilities along the river Calore (AV, Italy) in cooperation with the local in charge Authorities. The title of my Bachelor thesis is “Applications of Bioengineering in Hydraulics”.
- I enhanced my skills in the fields of River Engineering, Hydraulic and Maritime Structures, Hydrology, River Catchment Management, Geotechnics and Retaining Structures, Geology and Hydrogeology.

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
LCCI - ESOL International JETSET level 6 (2012) ESOL First Certificate in English (2003)					

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication, organisation, and managerial skills

Good skills gained through my experience as a teaching assistant for several Bachelor and Master courses, the participation to national/international projects, workshops, conferences and seminars,

research groups, supervision of Bachelor and Master dissertations.

Job-related skills

High-level skills in Hydraulics, Hydraulic Engineering, Hydraulic Structures, Hydrology, Risk Analysis, Probability and Statistics, MatLab programming, Model Optimization gained through my research activities.

Supervisor of Bachelor and Master dissertations in Hydraulic Engineering:

1. Nardi, M. (2021). Analisi dell'effetto COVID-19 sui consumi idropotabili: caso studio del quartiere di Soccavo in Napoli. Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
2. Casamento, F. (2021). Valutazione delle performance dei dati di rianalisi climatica come input per modelli di impatto. Tesi di Laurea Magistrale in Ingegneria Ambientale. Università degli Studi di Palermo.
3. Cesarano, L. (2019). Utilizzo dell'aggregazione dei dati di portata per la stima della variabilità del coefficiente di punta con il numero di abitanti. Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
4. Sarro, M. (2017) Analisi statistica dei consumi idrici nel quartiere di Soccavo (NA). Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
5. Criscuolo, R. A. (2016) Analisi dei deflussi fognari in tempo asciutto del bacino urbano Arena S. Antonio (NA). Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
6. Scognamiglio, E. (2016) Correlazione tra temperatura e portata di tempo asciutto nel bacino fognario Arena S. Antonio. Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
7. Tontoli, E. (2016) Efficienza prestazionale di un gruppo di pompaggio in condizioni di portata variabile. Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
8. Mileo, T. (2015) Effetti della variabilità spaziale della pioggia sui modelli di trasformazione afflussi-deflussi. Tesi di Laurea Magistrale in Ingegneria dei Sistemi Idraulici e di Trasporto. Università degli Studi di Napoli "Federico II".
9. De Vito, G. (2014) Analisi del regime di transizione di un manufatto di scarico ad asse verticale. Tesi di Laurea in Ingegneria Gestionale dei Progetti e delle Infrastrutture. Università degli Studi di Napoli "Federico II".
10. D'Amato, A. (2014) Indagine sperimentale su un manufatto di caduta ad asse verticale. Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
11. Stendardo, G. (2014) Analisi di sensitività per la calibrazione di un modello idrologico-idraulico della rete fognaria Arena S. Antonio (Napoli). Tesi di Laurea Magistrale in Ingegneria dei Sistemi Idraulici e di Trasporto. Università degli Studi di Napoli "Federico II".
12. D'Avino, D. (2013) Analisi sperimentale per la caratterizzazione di un manufatto di scarico ad asse verticale. Tesi di Laurea Magistrale in Ingegneria per l'Ambiente e il Territorio. Università degli Studi di Napoli "Federico II".
13. Mileo, T. (2013) Analisi stocastica dei deflussi fognari: bacino Arena S. Antonio (Napoli). Tesi di Laurea in Ingegneria Gestionale dei Progetti e delle Infrastrutture. Università degli Studi di Napoli "Federico II".

Teaching assistant for the "Water distribution and drainage networks" (2015-2018) and "Design and Management of water distribution networks" (2017-2020) classes.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital skills - Self-assessment grid

ECDL (2006)

Good command of Windows Systems, Microsoft Office™ tools, Internet browsers and LaTeX software gained through job and leisure activities.

Good command of the following software, gained through my research activity: MatLab, ArcMap, ArcHydro, HEC-geoRAS, HEC-RAS, AutoCAD, EPA-SWMM, EPA-NET.

Other skills

Chartered Engineer – Naples Engineering Board (No 20383).

Driving licence

B

ADDITIONAL INFORMATION

Publications

- Achouri, O., Panico, A., Bencheikh-Lehocine, M., Derbal, K., Arias Tranquilo, D., Iasimone, F., **Padulano**, R., Bouteraa, M., Rebahi, A., Pirozzi, F. (2021). Role of H2O2 dosage on methane production from tannery wastewater: experimental and kinetic study. *Journal of Water Process Engineering*, accepted.
- Padulano**, R., Rianna, G., Costabile, P., Costanzo, C., Del Giudice, G., & Mercogliano, P. (2021). Propagation of variability in climate projections within urban flood modelling: A multi-purpose impact analysis.
- Lama, G. F. C., Crimaldi, M., Pasquino, V., **Padulano**, R., & Chirico, G. B. (2021). Bulk Drag Predictions of Riparian *Arundo donax* Stands through UAV-Acquired Multispectral Images. *Water*, 13(10), 1333. <https://doi.org/10.3390/w13101333>
- Padulano**, R., Rianna, G., Costabile, P., Costanzo, C., Del Giudice, G., Mercogliano, P. (2021). Propagation of variability in climate projections within urban flood modelling: A multi-purpose impact analysis. *Journal of Hydrology*, 602, 126756. <https://doi.org/10.1016/j.jhydrol.2021.126756>
- Padulano**, R., Rianna, G., Costabile, P., Costanzo, C., Del Giudice, G., Mercogliano, P. (2021). Measuring urban resilience to flooding under climate change, EGU General Assembly 2021, online, 19-30 Apr 2021, EGU21-970. <https://doi.org/10.5194/egusphere-egu21-9705>
- Santini, M., **Padulano**, R., Rianna, G., Mancini, M., Stojiljkovic, M.: (2021). Projections of rainfall erosivity over Italy exploiting EURO-CORDEX ensemble, EGU General Assembly 2021, online, 19-30 Apr 2021, EGU21-8879. <https://doi.org/10.5194/egusphere-egu21-8879>
- Padulano**, R., Rianna, G., Santini, M. (2021). Datasets and approaches for the estimation of rainfall erosivity over Italy: A comprehensive comparison study and a new method. *Journal of Hydrology: Regional Studies*, 34, 100788. <https://doi.org/10.1016/j.ejrh.2021.100788>
- Padulano**, R., Del Giudice, G. (2020) "A nonparametric framework for water consumption data cleansing: an application to a smart water network in Naples (Italy)". *Journal of Hydroinformatics* 22(4), 666-680. DOI: 10.2166/hydro.2020.133
- Padulano**, R., Lama, G. F. C., Rianna, G., Santini, M., Mancini, M., & Stojiljkovic, M. (2020) "Future rainfall scenarios for the assessment of water availability in Italy". In *2020 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor)* (pp. 241-246). DOI: 10.1109/MetroAgriFor50201.2020.9277599
- Rianna, G., Santini, M., Mancini, M., **Padulano**, R., Noce, S. (2020). Exploiting Copernicus Climate Change Service (C3S) to assess ongoing and future soil erosion over Italy, EGU General Assembly 2020, Online, 4-8 May 2020, EGU2020-11356. <https://doi.org/10.5194/egusphere-egu2020-11356>

- **Padulano, R., Rianna, G., Mercogliano, P. (2020)** "Modellazione delle piene urbane in un contesto di cambiamento climatico: il caso studio di Napoli [Urban flood modelling in a climate change perspective: a case study in the City of Naples]". In *ICIRBM - 2020, Proceedings of Italian Conference on Integrated River Basin Management*, Volume 41. University of Calabria (IT). EdiBios (in Italian).
- Del Giudice, G., Di Cristo, C., **Padulano, R. (2019)** "Spatial aggregation effect on water demand peak factor". *Water* 12(7). DOI: 10.3390/w12072019
- **Padulano, R., Reder, A., Rianna, G. (2019)** "An ensemble approach for the analysis of extreme rainfall under climate change in Naples (Italy)". *Hydrological Processes* 33(14), 2020-2036. DOI: 10.1002/hyp.13449.
- **Padulano, R., Del Giudice, G. (2019)** "Pattern detection and scaling laws of daily water demand by SOM: an application to the WDN of Naples, Italy". *Water Resources Management* 33(2), 739-755. DOI: 10.1007/s11269-018-2140-0.
- Fecarotta, O., Carravetta, A., Morani, M. C., **Padulano, R. (2018)** "Optimal pump scheduling for urban drainage under variable flow conditions". *Resources* 7(4), 73. DOI: 10.3390/resources7040073.
- **Padulano, R., Del Giudice, G. (2018)** "A mixed strategy based on Self-Organizing Map for water demand pattern profiling of large-size smart water grid data". *Water Resources Management* 32(11), 3671-3685. DOI: 10.1007/s11269-018-2012-7.
- **Padulano, R., Del Giudice, G. (2018)** "Vertical drain and overflow pipes: review of literature and new experiments". *Journal of Irrigation and Drainage Engineering* 144(6), 04018010. **Editor's Choice June 2018**. DOI: 10.1061/(ASCE)IR.1943-4774.0001311.
- **Padulano, R., Del Giudice, G., Giugni, M., Fontana, N., Sorgenti degli Uberti, G. (2018)** "Identification of Annual Water Demand Patterns in the City of Naples". *MDPI Proceedings* 2(11), 587. DOI: 10.3390/proceedings2110587
- **Padulano, R., Del Giudice, G. (2018)** "A mixed strategy for water demand pattern detection by clustering". *Atti del XXXVI Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Ancona, 12-14 Settembre. Advanced srl edizioni. ISBN 9788894379907
- **Padulano, R., Fecarotta, O., Del Giudice, G., Carravetta A. (2017)** "Hydraulic design of a USBR Type II stilling basin". *Journal of Irrigation and Drainage Engineering* 143(5), 04017001. DOI: 10.1061/(ASCE)IR.1943-4774.0001150.
- Del Giudice, G., **Padulano, R.** "Rischio Idraulico [Hydraulic risk]", Capitolo in "Studio degli scenari di rischio a supporto del Piano di Protezione Civile del Comune di Pozzuoli [Risk scenarios for the Civil Protection Plan of Pozzuoli (NA)]", Editor: Castelluccio, R. Volume finanziato dal Comune di Pozzuoli (NA), Doppiovoce Ed., Napoli (in Italian). ISBN 978-88-89972-68-7
- Fecarotta, O., Carravetta, A., Del Giudice, G., **Padulano, R. (2016)** "Experimental results on the physical model of a USBR type II stilling basin". *Proceedings of Riverflow 2016*, Iowa City, USA, July 11-14.
- **Padulano, R., Del Giudice, G. (2016)** "Transitional and weir flow in a vented drop shaft with a sharp-edged intake". *Journal of Irrigation and Drainage Engineering* 142(5), 06016002. DOI: 10.1061/(ASCE)IR.1943-4774.0001011.
- Del Giudice, G., **Padulano, R. (2016)** "Combined use of EPA-SWMM and genetic algorithm for identification and calibration of a rainfall-runoff model". *Acta Geophysica* 64 (5), 1755-1778. DOI: 10.1515/acgeo-2016-0062.
- Del Giudice, G., **Padulano, R., Siciliano, D. (2016)** "Multivariate probability distribution for sewer system vulnerability under data-limited conditions". *Water Science & Technology* 73(4), 751-760. DOI: 10.2166/wst.2015.546.
- Del Giudice, G., **Padulano, R. (2016)** "Studio di vulnerabilità della rete fognaria del Comune di Napoli mediante analisi statistica multivariata [Vulnerability analysis of Naples sewer network with multivariate statistics]". *Atti del XXXV Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Bologna, 14-16 Settembre. Università di Bologna – DICAM edizioni (in Italian). DOI 10.6092/unibo/amsacta/5400
- Carravetta, A., Fecarotta, O., Golia, U. M., La Rocca, M., Martino, R., **Padulano, R., Tucciarelli, T. (2016)** "Optimization of osmotic desalination plants for water supply networks". *Water Resources Management* 30(11), 3965-3978. DOI: 10.1007/s11269-016-1404-9.

- **Padulano, R.**, Del Giudice, G., Carravetta, A. (2015) “Flow regimes in a vertical drop shaft with a sharp-edged intake”. *Journal of Applied Water Engineering and Research* 3(1), 29-34. DOI: 10.1080/23249676.2015.1026417.
- Del Giudice, G., Rasulo, G., Siciliano, D., **Padulano, R.** (2014) “Combined effects of parallel and series detention basins for flood peak reduction”. *Water Resources Management* 28(19), 3193-3205. DOI: 10.1007/s11269-014-0668-1.
- Del Giudice, G., **Padulano, R.**, Carravetta, A. (2014) “Un modello innovativo di partitore in corrente veloce”. *Atti del XXXIV Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Bari, 8-10 Settembre. Zaccaria Editore, Napoli. ISBN 978-88-904561-8-3
- Del Giudice, G., **Padulano, R.**, Carravetta, A. (2014) “Indagine sperimentale su un manufatto di caduta ad asse verticale”. *Atti del XXXIV Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Bari, 8-10 Settembre. Zaccaria Editore, Napoli. ISBN 978-88-904561-8-3
- Del Giudice, G., **Padulano, R.**, Rasulo, G. (2013) “Cartografia tematica del coefficiente di afflusso per la stima della portata indice nei bacini dell'Italia Meridionale”. *L'Acqua* 6, 9-16.
- Del Giudice, G., **Padulano, R.**, Rasulo, G. (2013) “Spatial prediction of the runoff coefficient in Southern Peninsular Italy for the index flood estimation”. *Hydrology Research* 45(2), 263-281. DOI: 10.2166/nh.2013.243.
- **Padulano, R.**, Del Giudice, G., Carravetta, A. (2013) “Experimental analysis of a vertical drop shaft”. *Water* 5(3), 1380-1392. DOI: 10.3390/w5031380.
- Del Giudice, G., **Padulano, R.**, Carravetta, A. (2013) “Novel diversion structure for supercritical flow”. *Journal of Hydraulic Engineering* 139(1), 84-87. DOI: 10.1061/(ASCE)HY.1943-7900.0000660.

Conferences and Seminars

- 2nd IAHR Young Professionals Congress (virtual Conference, 20/11-2/12/202): **Padulano, R.**, Rianna, G., Costabile, C., Costanzo, C., Del Giudice, G., Mercogliano, P. “Estimating urban flood resilience under climate change” (speaker).
- Le Giornate dell'Idrologia 2021 (Napoli, 29/9-1/10/2021): **Padulano, R.**, Rianna, G., Costabile, C., Costanzo, C., Del Giudice, G., Mercogliano, P. “Stima degli effetti del cambiamento climatico sui fenomeni di pluvial flooding nei contesti urbani: il caso di Napoli”.
- EGU General Assembly (virtual Conference, 19-30/4/2021): **Padulano, R.**, Rianna, G., Costabile, C., Costanzo, C., Del Giudice, G., Mercogliano, P. “Measuring urban resilience to flooding under climate change” (speaker).
- EGU General Assembly (virtual Conference, 19-30/4/2021): Santini, M., **Padulano, R.**, Rianna, G., Mancini, M., Stojiljkovic, M. “Projections of rainfall erosivity over Italy exploiting EURO-CORDEX ensemble” (speaker).
- ICIRBM 2020 – 41° Italian Conference on Integrated River Basin Management (virtual Proceedings Presentation Event, 22/12/2020): **Padulano, R.**, Rianna, G., Mercogliano, P. “Modellazione delle piene urbane in un contesto di cambiamento climatico: il caso studio di Napoli” [Urban flood modelling in a climate change perspective: a case study in the City of Naples] (speaker).
- 2020 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor) (virtual Conference, 4-9/11/2020): **Padulano, R.**, Lama, G. F. C., Rianna, G., Santini, M., Mancini, M., Stojiljkovic, M. “Future rainfall scenarios for the assessment of water availability in Italy”.
- ClimRisk 2020 (virtual Conference, 21-23/10/2020): Mercogliano, P., **Padulano, R.**, Rianna, G., Costabile, P., Costanzo, C. “Flood hazard mapping in urban areas: modelling perspectives under climate change” (speaker).
- EGU General Assembly (virtual Conference, 4-8/5/2020): Rianna, G., Santini, M., Mancini, M., **Padulano, R.**, Noce, S. “Exploiting Copernicus Climate Change Service (C3S) to assess ongoing and future soil erosion over Italy”.
- CMCC Webinar “The C3S Demo Case Soil Erosion: Projecting Rainfall Erosivity and Soil Loss under Climate Change through Copernicus Data” (23/6/2020): **Padulano, R.** “Estimation of current and future rainfall erosivity over Italy” (speaker).
- CMCC Webinar (19/12/2019): **Padulano, R.** “Urban flood modeling in a changing climate” (speaker).
- CMCC Webinar “The C3S Demo Case Soil Erosion: handling soil loss hazards through Copernicus

data and tools" (5/12/2019): **Padulano**, R. "A strategy for R-factor estimation" (speaker).

- T.R.I.G.-Eau (Governance e gestione partecipata del rischio idraulico in ambito urbano e azioni di adattamento ai cambiamenti climatici) Autumn School (Camogli, 6-8/11/2019): **Padulano**, R., Mercogliano, P. "Analisi dell'incidenza del cambiamento climatico sulle alluvioni urbane" [Analysis of climate change influence on urban flooding] (speaker).
- ICIRBM 2019 – 40° Italian Conference on Integrated River Basin Management (Guardia (CS), 21/06/2019): Mercogliano, P., Bucchignani, E., **Padulano**, R. "Regional climate simulations with COSMO-CLM for the eastern Mediterranean over 1979-2011 and climate projections over the XXI century" (speaker).
- ADAPT Webinar (16/5/2019): **Padulano**, R., Rianna, G., Reder, A., Ciervo, F., Mercogliano, P. "Soluzioni grey per l'adattamento al cambiamento climatico" [Grey infrastructures for climate change adaptation] (speaker).
- ADAPT Webinar (14/5/2019): Barbato, G., **Padulano**, R., Mercogliano, P. "Il processo per la realizzazione di un piano locale di adattamento – Focus sulle linee guida del progetto ADAPT" [Towards a local plan for climate change adaptation – Focus on the guidelines of the ADAPT Project] (speaker).
- ECCA – European Climate Change Adaptation Conference (Lisboa, 28-31/05/2019): **Padulano**, R., Reder, A., Rianna, G. "A simulation framework for updating IDF curves under the potential effects of climate changes in Naples (Southern Italy)".
- International Seminar PRIN 2015 (Dipartimento di Architettura, Università degli Studi di Napoli Federico II) "Climate change: solutions for stormwater management in open spaces" (Napoli, 14/11/2018): **Padulano**, R. "Integrating Climate Change into urban flooding models: challenges and opportunities" (speaker).
- XXXVI Convegno di Idraulica e Costruzioni Idrauliche (Ancona, 12-14/9/2018): **Padulano**, R., Del Giudice, G. "A mixed strategy for water demand pattern detection by clustering".
- The 3rd EWaS International Conference on "Insights on the Water-Energy-Food Nexus" (Lefkada, Greece, 27-30/06/2018): **Padulano**, R., Del Giudice, G., Giugni, M., Fontana, N., Sorgenti degli Uberti, G. "Identification of annual water demand patterns in the City of Naples" (speaker).
- VII Seminario Gestione e Riabilitazione delle Infrastrutture Idrauliche GERI (Gaeta, 22-23/06/2017): Del Giudice, G., **Padulano**, R. "Un modello probabilistico per la riabilitazione delle infrastrutture idrauliche" [A probabilistic model for hydraulic infrastructures renovation];
- Seminario dell'Associazione Idrotecnica Italiana "Sulla ricerca delle perdite idriche nei sistemi acquedottistici" (Napoli, 28-29/11/2016): **Padulano**, R., Piccirillo, G., Sorgenti degli Uberti, G. "Una strategia per l'assegnazione della priorità di intervento mediante modelli statistici: applicazione alla rete idrica sotterranea del quartiere di Chiaia" [A strategy for the estimation of intervention priority with statistical models: an application to the water distribution network of Chiaia] (speaker).
- XXXV Convegno di Idraulica e Costruzioni Idrauliche (Bologna, 14-17/09/2016): Del Giudice, G., **Padulano**, R. "Studio di vulnerabilità della rete fognaria del Comune di Napoli mediante analisi statistica multivariata" (speaker) [Vulnerability estimation of the sewer network of the City of Naples with multivariate statistics];
- "Ricerche per innovare", Dipartimento di Ingegneria Civile, Edile e Ambientale e Dipartimento di Strutture per l'Ingegneria e l'Architettura (Napoli, 05/06/2015): **Padulano**, R., Del Giudice, G. "Dalla sperimentazione alla progettazione – Manufatti di derivazione in corrente veloce nei sistemi di drenaggio urbano" [From the lab to the design – diversion structures for supercritical flows in urban drainage networks] (speaker).
- XXXIV Convegno di Idraulica e Costruzioni Idrauliche (Bari, 8-10/09/2014): Del Giudice, G., **Padulano**, R., Carravetta, A. "Un modello innovativo di partitore in corrente veloce" [A novel diversion structure for supercritical flows] (speaker);
- XXXIV Convegno di Idraulica e Costruzioni Idrauliche (Bari, 8-10/09/2014): **Padulano**, R., Del Giudice, G., Carravetta, A. "Indagine sperimentale su un manufatto di caduta ad asse verticale" [Experimental analysis of a vertical drop shaft] (speaker).

Courses

- Training Course "Pressure Control with Energy Production by PAT (Pump as Turbine) in Water Supply Networks". CISM (International Centre for Mechanical Science), Udine (Italy), 11-15 September 2017.
- Training Course "On the general trial of centrifugal pumps and electropumps and on the specific

trial of electropumps connected to synchronous and asynchronous motors with inverters". Caprari S.p.A. (Modena, Italy), 22-26/01/2018.

Projects

- **HIGHLANDER** - HIGH performance computing to support LAND sERvices (Connecting European Facility Programme CEF-IA). Contributor for Work Package 4 "Simulating the environment: from Numerical Models to Machine Learning Data Integration" for the implementation of two Downstream Application and pre-Operational Services (DApOS) focused on soil erosion and water resources availability.
- **TEACHER** - joinT Efforts to increase water management Adaptation to climate CHanges in central EuRope (Interreg Central Europe 2007-2013). Contributor for Work Package 4 "Joint Strategy" for the development of a climate-proof suite of tools included in the "Integrated toolbox for climate change adaptation and risk prevention" (CC-ARP-CE).
- Copernicus Climate Change Service (**C3S_430**) "Sectoral Information System to Support Disaster Risk Reduction" commissioned by ECMWF (European Centre for Medium-range Weather Forecasts). Contributor for the Work Packages "Service Development and Prototyping" and "Support and Help Development Activities", involving extreme value analysis and development of Intensity-Duration-Frequency curves over Europe exploiting gridded precipitation products (ERA5, ERA5-Land, UERRA, E-OBS among others).
- Copernicus Climate Change Service (**C3S_429**) (closed). Main contributor for the Work Package "Application Design: Interaction with users, Requirement Analysis & Application architecture" for the identification of data and methodologies suitable for the computation of current and future rainfall erosivity over Italy for the estimation of rainfall-induced soil losses.
- **ADAPT** – Assistere l'aDAttamento ai cambiamenti climatici dei sistemi urbani dello sPazio Transfrontaliero (Interreg Maritime Italy-France 2014-2020) (closed). Main contributor for the development of the following documentation: "Guidelines for the redaction of adaptation plans to climate change for flood risks", "Local adaptation plan to climate change for flood risks in the Municipality of Sassari", "Local adaptation plan to climate change for flood risks in the Municipality of Alghero (SS)" and "Transboundary adaptation plan to climate change for flood risks". Responsible for the sections related to the evaluation of flood hazards and climate change impacts).

Date: 14/09/2021

Signature: *Roberta Padovani*