


## PERSONAL INFORMATION

## Marco Dionigi

 *Institute for Geo-Hydrological Protection (IRPI), National Research Council (CNR), via della Madonna Alta, 126 – 06128, Perugia, Italy.*



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Date of birth | Nationality Italian

Current Position: Post Doc Research Grant Holder

## RESEARCH INTERESTS

### Summary

My research activity mainly regards streamflow measurements, also with innovative methodologies, for eco – hydrological and hydraulic applications.

I am training in the use of specific instrumentation with ADV (Acoustic Doppler Velocimeter) technology for river flow measurements.

I've been involved in numerous research projects: aiming to unravel the interactions between carbon and water cycles as to understand the modulating effect of the vegetation on water-supply deficit and to predict flood wave and hydraulic risk assessment.

To this end I carry out several experimental outdoor activities aimed at acquiring samples for water isotope analysis in different hydrological compartments (streams, groundwater, runoff, rainwater); disturbed and undisturbed soil samples for the determination of physical and hydraulic parameters (sieved fraction, hydraulic conductivity) and the installation of instruments for the determination of soil moisture and rainfall in agroecosystems forests.

## WORK EXPERIENCE

From 17/01/2022 to today

### Research Fellow at CNR – IRPI

National Research Council (CNR) - Institute for Geo-Hydrological Protection (IRPI) .

Research activity in the topic related to "Estimation and monitoring of river flow, including with innovative methodologies, in support of hydrological and hydraulic applications; monitoring and analysis of vulnerability of embankments, monitoring and estimation of under-canopy interception and soil moisture soil at forest sites, monitoring by remote techniques using drones".

From 2012 to 2021

### Employed for the company Anseme spa, Cesena, Italy

- Crop specialist and technical for the production of hybrid vegetable seeds

2011

### Company CRE fotovoltaico Srl – Foligno, Umbria, Italy

- Data processing - organizing and cataloging regulations - Drafting informational materials

From October 2008 to January 2009

### Studio Agronomi Associati Perugia. Via Cesare Balbo 3 Perugia, Italy

- On-screen photo interpretation of agricultural areas of the different land uses and assignment of the corresponding use codes

From May 2007 to September 2007

### University of TUSCIA – Department of Geology and Mechanical, Naturalistic and Hydraulic Engineering, Viterbo, Lazio, Italy

- Survey and risk assessment for workers' health, environment and product safety among companies in Umbria

## EDUCATION AND TRAINING

- 25/05/2022 **Unmanned Aircraft System (UAS) pilot certificate in open categories A1 - A3**  
ENAC (Italian Civil Aviation Authority)
- 18/01/2011 **PhD degree Agricultural Mechanization**  
University of TUSCIA, Viterbo, Italy – Faculty of Agriculture  
▪ Thesis: Evaluation of the main risk factors and proposal for action for workers' safety in oil mills
- 23/01/2007 **Qualification to practice the profession of Agronomist and Forester**  
Federation of agronomists and foresters of Umbria – Order of Perugia
- 01/04/2006 **MA Crop and Environmental Sciences Agricultural Systems (Hons)**  
University of Perugia – Faculty of Agriculture  
▪ Thesis: Technical and economic analysis for poplar short rotation forestry cultivation.  
▪ Mark 110/110 cum laude
- 28/04/2004 **BA Science and Technology of Crops**  
University of Perugia – Faculty of Agriculture  
▪ Thesis: The role of genetic improvement in organic farming  
▪ Mark 107/110

## PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

UNDERSTANDING		SPOKEN		WRITING
Listening	Reading	Interaction	Speech	
B2	B2	B2	B2	B2

Replace with language

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

## NATIONAL AND INTERNATIONAL PROJECTS

### Research projects and activity:

#### FLO – CAMP (participation)

- River flow measurement using specific instrumentation with ADV (Acoustic Doppler velocimeter) and ADCP (Acoustic Doppler Current Profiler) technologies.
- Acquisition, control, processing and storage of collected data and development of functional relationships between water level and river flow (rating curves)
- Use of geographic information systems (GIS)

#### WATERSTEM (participation)

- Estimation of throughfall and soil moisture variability in mountainous Mediterranean catchments and installation of tools for the data acquisition
- samplings for stable isotope analysis of water in different hydrological compartments (streams, groundwater, runoff, rainwater)

- Collection of (disturbed and undisturbed) soil samples for determination of physical and hydraulic parameters (grain composition, hydraulic conductivity)
- Monitoring by remote techniques using drones (UAS – Unmanned Aircraft Systems)

#### **FLOris – MAN (participation)**

- Data acquisition of hydraulic structures in relation to embankment vulnerability

#### **WAFER (participation)**

- Data acquisition, sampling and data analysis

#### **Hydro4C (participation)**

- Data acquisition, sampling and data analysis

#### **ACQUACENTRO (participation)**

- Estimating water needs in relation to climate change, with special reference to irrigation needs

#### **St3TART (participation)**

- Data acquisition aiming on the validation of satellite measurements and their use as a monitoring tool of the flow

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### **FURTHER INFORMATION**

#### **Participation in training courses**

- May 2023 – Theoretical training course. Methods and instruments for environmental sampling. Ecosearch, Montone, Umbria, Italy.
- December 2023 – educational workshop: description of forest ecosystems, classification and description of seeds. Più liberi più libri, national exposition of small and medium-sized editors in Rome, Lazio, Italy.
- June 2022 – practical individual UAS (Unmanned Aircraft System) flight training course held at the Italdron training facility in Terni, Umbria, Italy
- May 2022 Theoretical training course for UAS (Unmanned Aircraft System) pilot qualification in open categories A1 - A3
- May 2022 – Theoretical training course for UAS (Unmanned Aircraft System) pilot qualification in open categories A2

- May 2022 – Training course in the computer lab activity inherent in Information Systems and use of GIS. Course of Ecology and Fundamentals of Ecological Systems. University of Salento, Lecce, Italy

#### Memberships

- Italian Hydrological Society since 2022
- European Geoscience Union since 2023

#### Personal data

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

Date: Perugia, 29/03/2023

Signature: Marco Dionigi

#### List of ISI publications

1. Bahmanpouri F., Termini D., Barbetta S., **Dionigi M.**, Moramarco T. (2023), Investigating hydrodynamics and turbulent effects for different flow conditions using spatial complexity metrics (in preparation).
2. Bahmanpouri F., Termini D., Barbetta S., **Dionigi M.**, Moramarco T. (2023), Significance of hydraulic complexity parameters M1 and M2 based on laboratory and field data. Hydrology Research 2023; nh2023089. doi: <https://doi.org/10.2166/nh.2023.089>
3. Porceddu P.R., Rosati L., **Dionigi M.** (2010), Evaluation of temporal variations in moisture and calorific value of vine and olive pruning, – J. of Ag. Eng. - Riv. di Ing. Agr., 4, 9-13.

#### List of non-ISI publications

1. Porceddu P. R., **Dionigi M.** (2006) – Analisi tecnica ed economica del pioppo S.R.F. Estimo e Territorio n. 12, pp 36 – 41.

#### Conference contributions

1. **Marco Dionigi**, Matteo Verdone, Daniele Penna, Silvia Barbetta, Christian Massari – Variabilità nei livelli di throughfall tra alberi di quercia e faggio in un bacino montano dell'Appennino centrale. Le Giornate dell'Idrologia 2023 della Società Idrologica Italiana. 13 – 15 september 2023, Matera, Italy.
2. **Marco Dionigi**, Marco Stelluti, Christian Massari, Sandro Costantini, Stefano Nodessi Proietti, Silvia Barbetta – Servizio Idrografico della Regione Umbria: strumenti interattivi per la diffusione di dati idro-meteorologici, studi ed analisi a supporto della gestione della risorsa idrica e della valutazione del rischio idraulico. Le Giornate dell'Idrologia 2023 della Società Idrologica Italiana. 13 – 15 september 2023, Matera, Italy.
3. **Marco Dionigi**, Silvia Barbetta, Tommaso Moramarco – Distribuzione della velocità e fenomeno del Dip in canali naturali. Le Giornate dell'Idrologia 2023 della Società Idrologica Italiana. 13 – 15 september 2023, Matera, Italy.
4. **Marco Dionigi**, Matteo Verdone, Daniele Penna, Silvia Barbetta, Christian Massari – Throughfall variability between oak and beech trees in a mountainous Mediterranean catchment. Workshop CNR IRPI, 3 – 5 july, Rome, Italy.
5. Manca di Villahermosa, F., **Dionigi M.**, Donnini, M., Fronzi, D., Tazioli, A., Spoloar, A., Turetta, C., Cappelletti, D., Petroselli, C., Bruschi, F., Selvaggi, R., Penna, D., and Massari, C.: Geology controls hydrological regime and spatio-temporal origin of surface and subsurface water in two adjacent mountain catchments in Central Italy, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-9057, <https://doi.org/10.5194/egusphere-egu23-9057>, 2023.
6. **Dionigi M.**, Verdone, M., Penna, D., Barbetta, S., and Massari, C.: Throughfall variability between oak and beech trees in a mountainous Mediterranean catchment, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-2433, <https://doi.org/10.5194/egusphere-egu23-2433>, 2023.
7. Marco Stelluti, **Marco Dionigi**, Silvia Barbetta, Christian Massari, Sandro Costantini, Stefano Nodessi Proietti (2022) – Nuovo sistema di diffusione di massa dei dati di monitoraggio idro – pluvio – termometrici della Regione Umbria e Cruscotto operativo del Servizio Idrografico della Regione Umbria. Le Giornate dell'Idrologia 2022 della Società Idrologica Italiana. 9 – 11 november 2022, Genova, Italy.
8. Porceddu P. R., **Dionigi M.** (2010) – Evaluation of noise levels in olive mills. International conference: "Work safety and risk prevention in agro – food and forest systems". 16 – 18 september 2010, Ragusa, Italy
9. Porceddu P. R., Rosati L., **Dionigi M.** (2008) – Risk profiles for workers involved in meat transformation processes. International conference: "Innovation technology to empower safety, health and welfare in agriculture and agro – food systems". 15 – 17 september 2008, Ragusa, Italy.
10. Porceddu P. R., **Dionigi M.** (2007) – La meccanizzazione per l'utilizzo energetico delle biomasse. Atti del Workshop: "Residui e sottoprodotti organici una risorsa da valorizzare". 25 october 2007, Foligno, Italy.
11. **Dionigi M.** (2007) – Aspetti tecnici sulla coltivazione del pioppo S.R.F. Atti del Convegno: "Sviluppo Rurale e Agroenergie". 9 June 2007, Città di Castello, Italy.
12. **Dionigi M.**, Porceddu P. R. (2007) – Il pioppo S.R.F., aspetti tecnici ed economici. Atti del Convegno: "Lo stato della conoscenza sulle biomasse in Umbria" – Impegno formativo della Facoltà di agraria nel settore delle Biomasse. 21 february 2007, Perugia, Italy.
13. Porceddu P. R., Babucci V., **Dionigi M.** (2006) – Confronto tecnico ed economico su diverse possibilità di raccolta delle potature di vite ed olivo. Atti del Convegno: "Esperienze Italiane, Risultati del Progetto COFIN – Filiere Biomassa – Energia in Italia – Politiche locali in atto". 20 – 21 december 2006, Ancona, Italy.