

PERSONAL INFORMATION

Marco Rotiroti



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Sex Male | Date of birth 14/09/1983 | Nationality Italian

Mother tongue Italian

Other language English – Understanding: C1; Speaking: C1; Writing C1

WORK EXPERIENCE

2025 - Present

Associate Professor

Department of Earth and Environmental Sciences, University of Milano-Bicocca, Piazza della Scienza 1, 20126 Milano, Italy; <https://www.disat.unimib.it/en>

- Research in hydrogeology, hydrogeochemistry, isotope geochemistry, contaminated sites, groundwater/surface water interactions, groundwater flow modelling, reactive transport modelling
- Teacher of the courses Isotopes as Environmental Tracers (2025-present), Groundwater Pollution & Remediation (2025-present), Laboratory of Surface Water & Groundwater Monitoring (2025-present), Laboratory of Understanding Sustainable Management of Industrial Water (2025-present).

2020 - 2025

Assistant Professor

Department of Earth and Environmental Sciences, University of Milano-Bicocca, Piazza della Scienza 1, 20126 Milano, Italy; <https://www.disat.unimib.it/en>

- Research in hydrogeology, hydrogeochemistry, isotope geochemistry, contaminated sites, groundwater/surface water interactions, groundwater flow modelling, reactive transport modelling
- Teacher of the courses Isotopes as Environmental Tracers (2018-2025), Environmental Geochemistry (2020-2024), Groundwater Pollution & Remediation (2021-2025), Laboratory of Surface Water & Groundwater Monitoring (2023-2025).

2013 - 2020

Postdoctoral Researcher

Department of Earth and Environmental Sciences, University of Milano-Bicocca, Piazza della Scienza 1, 20126 Milano, Italy; <https://www.disat.unimib.it/en>

- Groundwater quality by a multidisciplinary environmental approach and hydrogeochemical modelling
- Geochemical modelling of polluted groundwater resources

EDUCATION AND TRAINING

2010 - 2012

PhD in Environmental Sciences

University of Milano-Bicocca, Milano, Italy.

- Thesis title: *Hydrogeology and hydrogeochemistry of As, Fe, Mn rich groundwater of the multi-layer aquifer in the lower Po Plain, Lombardy region (northern Italy)*. Tutor: Prof. Tullia Bonomi.

2006 - 2009 Master in Environmental Sciences

University of Milano-Bicocca, Milano, Italy. 110/110 cum Laude.

- Thesis title: *Hydrocarbon contaminated site analysis with groundwater flow & transport modelling in the city of St. Petersburg (Russia)*. Tutor: Prof. Tullia Bonomi.

2002 - 2006 Bachelor in Environmental Sciences

University of Pisa, Pisa, Italy. 110/110 cum Laude.

- Thesis title: *Environmental impact assessment of a wastewater treatment plant on the receiving water body*. Tutor: Prof. Paolo Andreussi.

BIBLIOMETRICS
(SCOPUS up to 05/11/2025)

Number of Publications	55
Number of Citations	868
H-index	17

JOURNAL ARTICLES
(2019-present)

- (1) Carlson, G., Massari, C., Rotiroti M, Bonomi, T., Preziosi, E., Wilder, A., Whitaker, D., Girotto, M. 2025. Intensive irrigation buffers groundwater declines in key European breadbasket. *Nature Water*, 3(6): 683-692. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1038/s44221-025-00445-4>
- (2) Caschetto, M., Sacchi, E., Pinti, D.L., Riparbelli, C., Bruno, S., Zanotti, C., Bonomi, T., Rotiroti M. 2025. Surface-water-irrigation return flow dominates groundwater recharge, groundwater age and nitrate dynamics in an alluvial basin aquifer. *Water Res.* 285, 124040. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.watres.2025.124040>
- (3) Redaelli, A., Bonomi, T., Sartirana, D., Sinatra, G., Rotiroti M, Zanotti, C. 2025. The dual role of irrigation in the groundwater budget under baseline conditions versus the 2022 drought: Lessons for future climate adaptation. *J. Hydrol*, 658, 133211. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.jhydrol.2025.133211>
- (4) Marcolla A, Fussi F, Fabbri P, Dalla Libera N, Asplund F, Rotiroti M, Bonomi T. 2025. Developing a hydrogeological data management system with a participatory approach for supporting sustainable groundwater use in low-income countries: The case of Guinea-Bissau (West Africa). *Hydrogeol. J.*, 33(5): 1449-1464. **JRC Q2 in WATER RESOURCES** <https://doi.org/10.1007/s10040-025-02936-w>
- (5) Sartirana, D., Zanotti, C., Palazzi, A., Pietrini, I., Frattini, P., Franzetti, A., Bonomi, T., Rotiroti, M., 2025. Assessing data variability in groundwater quality monitoring of contaminated sites through factor analysis and multiple linear regression models. *J. Contam. Hydrol.* 269. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.jconhyd.2024.104471>
- (6) Sartirana, D., Zanotti, C., Rotiroti, M., Caschetto, M., Redaelli, A., Bruno, S., Fumagalli, L., De Amicis, M., Bonomi, T., 2024. Urban Water Management in Milan Metropolitan Area, a review. *Acque Sotter. - Ital. J. Groundw.* 13, 102–122. **JRC Q4 in WATER RESOURCES** <https://doi.org/10.7343/as-2024-763>
- (7) Biasibetti, M., Longhi, E., Bozza, S., Zanotti, C., Rotiroti, M., Fumagalli, L., Caschetto, M., Redaelli, A., Bonomi, T., 2024. Climate-related risk assessment in water safety plans: the case study of Acque Bresciane (Italy). *J. Water Health* 22, 97–122. **JRC Q3 in ENVIRONMENTAL SCIENCES** <https://doi.org/10.2166/wh.2023.103>

- (8) Rotiroti, M., Sacchi, E., Caschetto, M., Zanotti, C., Fumagalli, L., Biasibetti, M., Bonomi, T., Leoni, B., 2023. Groundwater and surface water nitrate pollution in an intensively irrigated system: Sources, dynamics and adaptation to climate change. *J. Hydrol.* 623, 129868. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.jhydrol.2023.129868>
- (9) Zanotti, C., Rotiroti, M., Redaelli, A., Caschetto, M., Fumagalli, L., Stano, C., Sartirana, D., Bonomi, T., 2023. Multivariate Time Series Clustering of Groundwater Quality Data to Develop Data-Driven Monitoring Strategies in a Historically Contaminated Urban Area. *Water (Switzerland)* 15. **JRC Q2 in WATER RESOURCES** <https://doi.org/10.3390/w15010148>
- (10) Zanchi, M., Zapperi, S., Zanotti, C., Rotiroti, M., Bonomi, T., Gomarasca, S., Bocchi, S., La Porta, C.A.M., 2022. A pipeline for monitoring water pollution: The example of heavy metals in Lombardy waters. *Heliyon* 8. **JRC Q1 in MULTIDISCIPLINARY SCIENCES** <https://doi.org/10.1016/j.heliyon.2022.e12435>
- (11) Sartirana, D., Zanotti, C., Rotiroti, M., De Amicis, M., Caschetto, M., Redaelli, A., Fumagalli, L., Bonomi, T., 2022. Quantifying Groundwater Infiltrations into Subway Lines and Underground Car Parks Using MODFLOW-USG. *Water (Switzerland)* 14. **JRC Q2 in WATER RESOURCES** <https://doi.org/10.3390/w14244130>
- (12) Zanotti, C., Rotiroti, M., Caschetto, M., Redaelli, A., Bozza, S., Biasibetti, M., Mostarda, L., Fumagalli, L., Bonomi, T., 2022. A cost-effective method for assessing groundwater well vulnerability to anthropogenic and natural pollution in the framework of water safety plans. *J. Hydrol.* 613, 128473. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.jhydrol.2022.128473>
- (13) Sartirana, D., Rotiroti, M., Bonomi, T., De Amicis, M., Nava, V., Fumagalli, L., Zanotti, C., 2022. Data-driven decision management of urban underground infrastructure through groundwater-level time-series cluster analysis: the case of Milan (Italy). *Hydrogeol. J.* 30, 1157–1177. **JRC Q2 in WATER RESOURCES** <https://doi.org/10.1007/s10040-022-02494-5>
- (14) Zanotti, C., Caschetto, M., Bonomi, T., Parini, M., Cipriano, G., Fumagalli, L., Rotiroti, M., 2022. Linking local natural background levels in groundwater to their generating hydrogeochemical processes in Quaternary alluvial aquifers. *Sci. Total Environ.* 805, 150259. **JRC Q1 in ENVIRONMENTAL SCIENCES** <https://doi.org/10.1016/j.scitotenv.2021.150259>
- (15) Bonomi, T., Sartirana, D., Toscani, L., Stefania, G.A., Zanotti, C., Rotiroti, M., Redaelli, A., Fumagalli, L., 2022. Modeling groundwater/surface-water interactions and their effects on hydraulic barriers, the case of the industrial area of Mantua (Italy). *Acque Sotter. - Ital. J. Groundw.* 11, 43–55. **JRC Q4 in WATER RESOURCES** <https://doi.org/10.7343/as-2022-569>
- (16) Leoni, B., Zanotti, C., Nava, V., Rotiroti, M., Stefania, G.A., Fallati, L., Soler, V., Fumagalli, L., Savini, A., Galli, P., Bonomi, T., 2021. Freshwater system of coral inhabited island: Availability and vulnerability (Magoodhoo Island of Faafu Atoll – Maldives). *Sci. Total Environ.* 785. **JRC Q1 in ENVIRONMENTAL SCIENCES** <https://doi.org/10.1016/j.scitotenv.2021.147313>
- (17) Rotiroti, M.; Bonomi, T.; Sacchi, E.; McArthur, J. M.; Jakobsen, R.; Sciarra, A.; Etiope, G.; Zanotti, C.; Nava, V.; Fumagalli, L.; Leoni, B. Overlapping Redox Zones Control Arsenic Pollution in Pleistocene Multi-Layer Aquifers, the Po Plain (Italy). *Sci. Total Environ.* 2021, 758, 143646. **JRC Q1 in ENVIRONMENTAL SCIENCES** <https://doi.org/https://doi.org/10.1016/j.scitotenv.2020.143646>.
- (18) Filippini, M., Zanotti, C., Bonomi, T., Sacchetti, V.G., Amorosi, A., Dinelli, E., Rotiroti, M., 2021. Deriving Natural Background Levels of Arsenic at the Meso-Scale Using Site-Specific Datasets: An Unorthodox Method. (Switzerland) 13. **JRC Q2 in WATER RESOURCES** <https://doi.org/10.3390/w13040452>
- (19) Sartirana, D., Rotiroti, M., Zanotti, C., Bonomi, T., Fumagalli, L., Amicis, M.D., 2020. A 3D geodatabase for urban underground infrastructures: implementation and application to groundwater management in milan metropolitan area. *ISPRS Int. J. Geo-Information* 9. **JRC Q2 in COMPUTER SCIENCE, INFORMATION SYSTEMS** <https://doi.org/10.3390/ijgi9100609>
- (20) Stefania, G.A., Bigoni, M., Zanotti, C., Rotiroti, M., Simonetto, F., Capodaglio, P., Fumagalli, L., Bonomi, T., 2020. Assessment of the groundwater quantitative status in the Aosta Plain (North-West Italy): applicability of the national guidelines defined by ISPRA. *Acque Sotter. - Ital. J. Groundw.* **JRC Q4 in WATER RESOURCES** <https://doi.org/10.7343/as-2020-446>

- (21) Fumagalli, L., Stefania, G.A., Zanotti, C., Sartirana, D., Di Martino, G.R., Perosa, A., Valentini, P., Rotiroti, M., Bonomi, T., 2020. Multivariate statistical analysis and numerical modelling for the hydrogeological and hydrochemical characterization of a closed MSW landfill: The case study of Vizzolo-Predabissi. *Acque Sotter. - Ital. J. Groundw.* 9, 7–16. **JRC Q4 in WATER RESOURCES** <https://doi.org/10.7343/as-2020-431>
- (22) Nava, V., Patelli, M., Bonomi, T., Stefania, G.A., Zanotti, C., Fumagalli, L., Soler, V., Rotiroti, M., Leoni, B., 2020. Chloride Balance in Freshwater System of a Highly Anthropized Subalpine Area: Load and Source Quantification Through a Watershed Approach. *Water Resour. Res.* 56. **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1029/2019WR026024>
- (23) Zanotti, C., Rotiroti, M., Sterlacchini, S., Cappellini, G., Fumagalli, L., Stefania, G.A., Nannucci, M.S., Leoni, B., Bonomi, T., 2019. Choosing between linear and nonlinear models and avoiding overfitting for short and long term groundwater level forecasting in a linear system. *J. Hydrol.* **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.jhydrol.2019.124015>
- (24) Zanotti, C., Rotiroti, M., Fumagalli, L., Stefania, G.A., Canonaco, F., Stefenelli, G., Prévôt, A.S.H., Leoni, B., Bonomi, T., 2019. Groundwater and surface water quality characterization through positive matrix factorization combined with GIS approach. *Water Res.* **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.watres.2019.04.058>
- (25) Stefania, G.A., Rotiroti, M., Buerge, I.J., Zanotti, C., Nava, V., Leoni, B., Fumagalli, L., Bonomi, T., 2019. Identification of groundwater pollution sources in a landfill site using artificial sweeteners, multivariate analysis and transport modeling. *Waste Manag.* 95, 116–128. **JRC Q1 in ENVIRONMENTAL SCIENCES** <https://doi.org/10.1016/j.wasman.2019.06.010>
- (26) Rotiroti, M.; Bonomi, T.; Sacchi, E.; McArthur, J. M.; Stefania, G. A.; Zanotti, C.; Taviani, S.; Patelli, M.; Nava, V.; Soler, V.; Fumagalli, L.; Leoni, B. The Effects of Irrigation on Groundwater Quality and Quantity in a Human-Modified Hydro-System: The Oglio River Basin, Po Plain, Northern Italy. *Sci. Total Environ.* 2019, 672, 342–356. **JRC Q1 in ENVIRONMENTAL SCIENCES** <https://doi.org/10.1016/J.SCITOTENV.2019.03.427>.
- (27) Nava, V., Patelli, M., Rotiroti, M., Leoni, B., 2019. An R package for estimating river compound load using different methods. *Environ. Model. Softw.* **JRC Q1 in WATER RESOURCES** <https://doi.org/10.1016/j.envsoft.2019.03.012>
- (28) Zanotti, C., Bonomi, T., Nannucci, M.S., Rotiroti, M., 2019. Groundwater level forecasting using linear time series modeling: The case study of the thermal aquifer system of Monsummano Terme (central Italy). *Rend. Online Soc. Geol. Ital.* **JRC Q4 in GEOSCIENCES, MULTIDISCIPLINARY** <https://doi.org/10.3301/ROL.2019.27>
- (29) Rotiroti, M., Zanotti, C., Fumagalli, L., Taviani, S., Stefania, G.A., Patelli, M., Nava, V., Soler, V., Sacchi, E., Leoni, B., 2019. Multivariate statistical analysis supporting the hydrochemical characterization of groundwater and surface water: A case study in northern Italy. *Rend. Online Soc. Geol. Ital.* **JRC Q4 in GEOSCIENCES, MULTIDISCIPLINARY** <https://doi.org/10.3301/ROL.2019.17>
- (30) Cavalca, L., Zecchin, S., Zaccheo, P., Abbas, B., Rotiroti, M., Bonomi, T., Muyzer, G., 2019. Exploring biodiversity and arsenic metabolism of microbiota inhabiting arsenic-rich groundwaters in Northern Italy. *Front. Microbiol.* **JRC Q2 in MICROBIOLOGY** <https://doi.org/10.3389/fmicb.2019.01480>

November 5th, 2025

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