Tommaso Casati

Viale Giacomo Matteotti, 38, 50038, Scarperia e San Piero, Italy

Date of Birth: 28/05/1997 **Nationality:** Italian

tommaso.casati2@unibo.it; tommy.casati@gmail.com

(+39) 3313155156

(+39) 0512094574

scopus.com/tommaso-casati

Education

PhD, Applied Geology (GEO/05) **Jan 2022 – Current**

University of Bologna, Italy
Department of Biological, Geological, and Environmental Sciences
Thesis: *Quantifying the effects of global warming on spring discharge and assessing future discharge trends along the Apennines (Italy)*
Supervisor: Alessandro Gargini, Full Professor
Co-Supervisor: Antonio Navarra, Full Professor
Co-Supervisor: Maria Filippini, Assistant Professor

Master's Degree in Geological Sciences and Technologies **Sept 2019 – July 2021**

University of Florence, Italy
Thesis: *Hydrogeological numerical modeling for the development of an open loop geothermal system*
Final Grade: 110/110 L

Bachelor's Degree in Geological Sciences **Sept 2016 – July 2019**

University of Florence, Italy
Thesis: *Geochemistry of evaporitic rocks and depositional environments*
Final Grade: 108/110

Work Experience

Visiting Research Fellow **Oct – Dec 2023**

Karlsruhe Institute of Technology, Germany
Institute for Applied Geosciences - Department of Hydrogeology
Project: *Application of tracing techniques for studying the response of karst aquifer systems to climate change*
Supervisor: Nico Goldscheider, Full Professor

Geological Technician **July – Dec 2021**

Mancini Geological Consultancy, Florence, Italy
Work duties: Support activities for the implementation of geological and geotechnical surveys
Employer: Geologist Dr. Marco Mancini, freelance

Internship **Mar – June 2021**

Mancini Geological Consultancy, Florence, Italy
Project: Development of hydrogeological numerical models for the configuration of low-enthalpy, open-loop geothermal systems in the alluvial plain of Florence
Supervisor: Geologist Dr. Marco Mancini, freelance

Publications

Depositional environment of shallow-marine arenites in the Northern Apennines (Italy) affects aquifer performance. An interpretive key to groundwater management in a climate change scenario

Journal: *Journal of Hydrology: Regional Studies* (under review)
Authors: Filippini, M., Amorosi, A., Dinelli, E., Segadelli, S., Landi, L., **Casati, T.**, Gargini, A.

Assessing the long-term trend of spring discharge in a climate change hotspot area

Journal: *Science of the Total Environment (STOTEN)* (2024-12)
Authors: **Casati, T.**, Navarra, A., Filippini, M., Gargini, A.
DOI: 10.1016/j.scitotenv.2024.177498

Hydrogeological assessment of a major spring discharging from a calcarenitic aquifer with implications on resilience to climate change

Journal: *Science of the Total Environment (STOTEN)* (2024-02)
Authors: Filippini, M., Segadelli, S., Dinelli, E., Failoni, M., Stumpp, C., Vignaroli, G., **Casati, T.**, Tiboni, B., Gargini, A.
DOI: 10.1016/j.scitotenv.2023.169770

Conferences

4th EuroKarst Congress (Rome, Italy, 11th - 14th June 2024)

Oral Presentation
The application of future climate scenarios to assess long-term effects of climate change on the discharge of the Sanità karst Spring, Southern Italy
Authors: Casati, T., Navarra, A., Filippini, M., Gargini, A.

50th Worldwide Groundwater Congress of the International Association of Hydrogeologists (IAH) (Cape Town, South Africa, 18th - 22nd Sept 2023)

Oral Presentation
Groundwater discharge and climate change: a study of century-long historical datasets to quantify the long-term effects of climate change on spring flow along the Apennines
Authors: Casati, T., Navarra, A., Filippini, M., Gargini, A.

Poster Presentation
Open-Loop Geothermal Systems - the issue of Iron-oxidizing bacteria in aquifers and heat-exchange plant: a case study at the Bologna Technopole
Authors: Casati, T., Cristino, S., Girolamini, L., Dinelli, E., Greggio, N., Gargini, A.

6th Edition of Flowpath - National Meeting on Hydrogeology (St. Julian's, Malta, 14th - 16th June 2023)

Poster Presentation
How have global warming impacted, and continue to impact, the discharge of Ermicciolo (Mount Amiata, Central Italy) and Sanità (Cervialto Massif, Southern Italy) Springs?
Authors: Casati, T., Navarra, A., Filippini, M., Gargini, A.

Poster Presentation
The open-Loop geothermal system of the Bologna Technopole: addressing Iron-oxidizing bacteria in pumping and reinjection wells
Authors: Casati, T., Cristino, S., Girolamini, L., Dinelli, E., Greggio, N., Gargini, A.

XVI National Conference of Geosciences and Information Technologies - Hydrogeology Section (Fondi, Italy, 5th - 7th Sept 2022)

Oral Presentation
Groundwater discharge and climate change: a data-driven approach to assess long-term effects of Climate Change on springs along the Apennine Mountain range
Authors: Casati, T., Navarra, A., Filippini, M., Gargini, A.

Licenses

Geologist Professional Licence - Section A — 17th Nov 2021
University of Florence, Italy

Courses

Hydrokarst modeling - Groundwater Vistas and Connected Linear Networks — 10th June 2024
Taught by Hydrogeologist Dr. Neven Krešić
Sapienza University, Rome

Scientific Writing — 25th - 28th Sept 2023
Taught by Prof. Gabor Lövei
University of Bologna

Academic English Skills (AcES) — Oct - Nov 2022
Taught by Prof. Timothy Trevor-Briscoe
University of Bologna

Python for Data Science and Machine Learning — June - July 2022
Udemy

Climate Change and Modeling — 3rd - 5th May 2022
Taught by Prof. George Zittis
University of Milan

Statistics (with R software) — 21st - 25th Feb 2022
Taught by Prof. Andrea Lucchetti and Dr. Stefania Sarno
University of Bologna

Statistical Methods — 24th Jan - 17th Feb 2022
Taught by Proff. Monica Chiogna and Silvia Bianconcini
University of Bologna

Skills

Networking and relationship-building skills, ability to communicate effectively and appropriately, ability to adapt to changing technologies and processes, excellent communication (verbal and written), presentation, and interpersonal skills with colleagues, as well as strong organisational and planning skills.

Language Skills

Italian: Native
English: B2
French: A2

Academic Instruction Skills

In the latter half of May 2023, I delivered a lecture on "The Effects of Climate Change on Groundwater" to students of the Master's Degree Programme in "Geology and Territory" as part of the "Applied Hydrogeology" course, led by Prof. Gargini. I contributed to several studies involving collaborations with external organisations, conducted by our hydrogeology research group at the University of Bologna. I also co-organised various field trips for students to areas of hydrogeological educational interest.

Digital Skills

Groundwater Vistas, ModelMuse, GIS, Python, R, Machine Learning, Metashape, Google Earth Pro