

1. **Name: Viviana Maggioni**

2. **Employer**

Department of Civil and Environmental Engineering
Politecnico di Milano, Milano, Italy

3. **City, Country**

Milano, Italy

4. **History of Employment**

Politecnico di Milano, Milano, Italy

- Department of Civil and Environmental Engineering, Water Engineering Division
 - Associate Professor (with tenure) 2026 – present

George Mason University, Fairfax, VA

- Department of Civil, Environmental, and Infrastructure Engineering
 - Associate Professor (with tenure) 2020 – 2026
 - Director of Undergraduate Affairs 2023 – 2026
 - Associate Chair for Research 2020 – 2023
 - Assistant Professor 2014 – 2020

*Earth Systems Science Interdisciplinary Center (ESSIC),
University of Maryland, College Park, MD*

- Visiting Assistant Research Scientist 2016 – 2024
- Visiting Research Associate 2014 – 2015
- Research Associate 2012 – 2014

5. **Degrees**

University of Connecticut	Environmental Engineering	Ph.D., 2012
Politecnico di Milano, Italy	Environmental Engineering	M.S., 2006
Politecnico di Milano, Italy	Environmental Engineering	B.S., 2003

6. **Narrative of Research Experience**

My research focuses on hydrology, remote sensing, and climate-related water resource challenges, seeking to enhance the effective use of remotely sensed products for water cycle research and environmental applications from the regional to the global scale. My work integrates satellite observations, land surface modeling, and data assimilation techniques to improve the monitoring and estimation of precipitation, soil moisture, snow, and other hydrological variables.

A central focus is improving the accuracy of satellite-based observations by merging them with model simulations through data assimilation. I have explored the assimilation of vegetation, freeze/thaw state, snow cover, soil moisture, and sea surface height into land surface and hydrodynamic models to improve our understanding of terrestrial carbon-water-energy cycle processes.

A core thread running through my career is precipitation uncertainty — developing error models for satellite rainfall products, tracing how uncertainty propagates into streamflow, flood forecasts, and water quality predictions, and contributing to international validation efforts. I have led and collaborated on projects addressing hydroclimatic hazards, flood forecasting, and water resource management in regions ranging from West Africa to High Mountain Asia. Throughout, my research has remained interdisciplinary and motivated by connecting advances in Earth observation to real-world environmental impact.

7. **Key Publications**

- Kidd, C., G. Huffman, V. Maggioni, P. Chambon, R. Oki; 2021: The Global Satellite Precipitation Constellation: Current Status and Future Requirements, *Bulletin of the American Meteorological Society* (BAMS), pp. 1–47.
- Rouf, T., V. Maggioni, Y. Mei, P. Houser; 2021: Towards Hyper-Resolution Land-Surface Modeling of Surface and Root Zone Soil Moisture, *Journal of Hydrology*, 594, p.125945.
- Mei, Y., V. Maggioni, P. Houser, Y. Xue, T. Rouf; 2020: A Nonparametric Statistical Technique for Spatial Downscaling of Precipitation over High Mountain Asia, *Water Resources Research*, 56, 11.
- Zhang, X., V. Maggioni, A. Rahman, P. Houser, Y. Xue, T. Sauer, S. Kumar, and D. Mocko; 2020: The Influence of Assimilating Leaf Area Index in a Land Surface Model on Global Water Fluxes and Storages, *Hydrology and Earth System Sciences*, Vol. 24 (3775–3788).
- Johnston, J., V. Maggioni, P. Houser; 2020: Comparing Global Passive Microwave Freeze/Thaw Records: Investigating Differences between Ka- and L-Band Products, *Remote Sensing of the Environment*, Vol. 247 (111936).
- Khan S., V. Maggioni, P.-E. Kirstetter; 2018: Investigating the potential of using satellite-based precipitation radars as reference for evaluating multi-satellite merged products, *Journal of Geophysical Research – Atmospheres*, 123, pp. 8646–8660.
- Maggioni, V. and C. Massari; 2018: On the performance of satellite precipitation products in riverine flood modeling: A review, *Journal of Hydrology*, 558, pp. 214–224.
- Maggioni V., E. Nikolopoulos, E. Anagnostou, M. Borga; 2017: Modeling satellite precipitation errors over mountainous terrain: The influence of gauge density, seasonality, and temporal resolution, *IEEE Transactions on Geoscience and Remote Sensing*, 55(7), pp. 4130-4140.
- Maggioni V., P. Meyers, M. Robinson; 2016: A review of merged high resolution satellite precipitation product accuracy during the Tropical Rainfall Measuring Mission (TRMM) – Era, *Journal of Hydrometeorology*, 17(4), pp. 1101-1117.

8. **Honors, Recognitions**

- College of Engineering and Computing Dean’s Faculty Award for Excellence in Service, 2025, George Mason University.
- Distinguished Faculty Mentor for Faculty Affairs and Development, 2021-2022, Mason Office of the Provost.
- HydroLearn Fellowship, 2020 HydroLearn Virtual Hackathon & Workshop, sponsored by the National Science Foundation.
- AMS (American Meteorological Society) Editor’s Award, 2016: “For very thorough reviews of several manuscripts, including excellent insights on precipitation error modeling.”

9. **Professional Society Membership**

American Geophysical Union (AGU)	2008-present
American Meteorological Society (AMS)	2008-present
International Precipitation Working Group (IPWG)	2012-present
Earth Science Women’s Network (ESWN)	2012-present
American Society of Civil Engineers (ASCE)	2024-2026
American Water Resources Association (AWRA)	2015-2022
American Society for Engineering Education (ASEE)	2015-2018