

PIERRE GENTINE
Associate Professor
Department of Earth and Environmental Engineering & Earth Institute
Columbia University
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HYSTORY OF EMPLOYMENT

2018- Faculty member, Earth Institute, Columbia University (by nomination)
2017- Tenured Associate Professor, Earth & Environmental Eng., Columbia University
2016-2017 Associate Professor, Earth and Environmental Engineering, Columbia University
2013-2017 Junior faculty, Earth Institute, Columbia University (by nomination)
2011-2016 Assistant Professor, Earth and Environmental Engineering, Columbia University
2009-2011 Instructor, Applied Physics and Applied Mathematics, Columbia University

DEGREES

2007-2010 Ph. D., Civil and Environmental Engineering, Massachusetts Institute of Technology
2004-2006 M.Sc., Civil and Environmental Engineering, Massachusetts Institute of Technology
1997-2002 M.Eng. – “Ingénieur” degree SupAéro – French National Aeronautical and Space Engineering school, Applied Mathematics, Toulouse, France

HONORS AND AWARDS

- AGU Global Environmental Change Early Career Award (2017)
- American Meteorological Society (AMS) Clarence Meisinger Award (2017)
- Invited scientist at ECMWF (European Centre for Medium range Weather Forecast - 2016)
- NSF CAREER award (2016)
- Department of Energy (DOE) Early Career award (2015)
- NASA New Investigator Program (early career) award (2014)
- Excellence in refereeing – Geophysical Research Letters (2013)
- Invited professorship award – Wageningen University (2013)
- Invited professorship award – Ecole Normale Supérieure (2012)
- Shoettler fellowship MIT (2004-2006)

RESEARCH EXPERIENCE

- Pierre Gentine’s work focuses on trying to better understand and predict changes in the continental hydrological cycle. He is trying to physically and statistically assess how water flows from the soil to the leaves through the plants’ xylem, then into the boundary layer and finally how water vapor forms clouds and precipitation, which ultimately falls into the soil, feeding the cycle.
To do so his work spans the following fields: land-atmosphere interactions, ecohydrology, remote sensing, boundary layer and convection. Pierre is using a combination of multiscale modeling (from very high resolution Direct Numerical Simulations, resolving the Navier Stokes equations down to molecular size, to Earth System Models), machine learning (when physical models fail) and observations (from in situ eddy-covariance or soil moisture observations to the global scale using remote sensing).



Pierre Gentine has been professor since 2011. He has supervised 7 PhD students, 8 MS students and 9 postdoctoral scholars.

SERVICE TO THE COMMUNITY

- American Geophysical Union (AGU) member
- American Meteorological Society (AMS) member

SERVICE TO THE COMMUNITY

Professional service:

- NOAA drought task force co-lead (2017-2020)
- OCO-3 satellite mission science objective team member
- World Climate Research Program (WCRP)'s Working Group on Seasonal to Interannual Prediction - member
- Global Land/Atmosphere System Study (GLASS) Global Energy and Water Cycle Experiment (GEWEX) - member
- LoCo (Local Coupling) Global Energy and Water Cycle Experiment (GEWEX) - member
- CUAHSI (Consortium of Universities for the Advancement of Hydrologic Science, Inc.) Columbia University representative
- Organizer of the Alpine summer school on land-atmosphere interactions (2015)
- NSF white paper panelist on the future of funding in hydrometeorology and hydroclimatology

Columbia University service:

- School
 - Committee on instruction (COI)
 - Eagleston scholar supervision
- Department
 - Head of graduate committee
 - Department undergraduate committee
 - Department undergraduate orientation
 - Department seminar organization
- Institute
 - Earth Institute postdoctoral selection committee

Associate Editor:

Hydrology and Earth System Sciences
Journal of Hydrometeorology
Frontiers in hydrology (up to 2017)
Frontiers in atmospheric sciences (up to 2017)

Reviewer:

- **Journals:**
Nature, Nature climate change, Water resources research, Advances in water resources, Journal of hydrology, Boundary-layer meteorology, Journal of hydrometeorology, Journal of climate, Journal of the atmospheric sciences, Atmospheric Chemistry and Physics, Hydrology and Earth system sciences, Biogeosciences.
- **Proposals:**
National Science Foundation, National Science Foundation CAREER, Department of Energy, NASA, NERC, Dutch space agency, Swiss Foundation, Department of Energy Laboratory review.

