Giuseppe Torri

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ACADEMIC APPOINTMENTS

Associate Professor	University of Hawai'i at Mānoa	2023 – present
Assistant Professor	University of Hawai'i at Mānoa	2018 – 2023
Research Associate	Harvard University	2014 - 2018
Post-Doc Fellow	Harvard University	2012 – 2014

EDUCATION

Ph.D.	Imperial College London	2012
M.Sc.	Università degli Studi di Milano – Bicocca	2008
B.Sc.	Università degli Studi di Milano – Bicocca	2005

PUBLICATIONS

Atmospheric Sciences (students and group members underlined)

Tang, M., J. Dudhia, C. Liu, G. Torri (accepted) – Cold pools, breezes, and monsoons: propagating convection over New Guinea, *J. Geoph. Res. Atmos.*

Nash, A. A., G. Torri (accepted) – The impact of the MJO on rainfall in Hawai'i, *J. Hydrometeor.*

Lagare, C., J.S. Ito, T. Yamazaki, G. Torri (accepted) – Seasonal Characteristics of Mesoscale Convective Systems over the Philippines*, Int. J. Clim.*

Serra, Y. L., B. R. Lintner, A. M. Durán-Quesada, M. Garbanzo-Salas, D. Hernández-Deckers, and G. Torri (2025) – Characterizing Tropical Easterly Waves across Central America during the Organization of Tropical East Pacific Convection (OTREC) Experiment. *J. Climate*, **38**, 6559–6578

Stone, Ž., and Coauthors (2025) – The Organization of Tropical East Pacific Convection (OTREC) Field Campaign—Five Years Later. *Bull. Amer. Meteor. Soc.*, **106**, E1264–E1275

Viscardi, L., G. Torri, D. K. Adams, H. de M. J. Barbosa (2025) – Sensitivity of the shallow-to-deep convective transition to moisture and wind shear in the Amazon, **17**, e2024MS004238, *Journal of Advances in Modeling Earth Systems*

Brennis, T., N. Lautze, R. Whittier, A. Kagawa-Viviani, H. Tseng, G. Torri, D. Thomas (2024) – Understanding the source and evolution of precipitation stable isotope composition across O'ahu, Hawai'i, *J. Hydrometeor.*, **25**, 1283–1302.

Viscardi, L., G. Torri, D. K. Adams, H. de M. J. Barbosa (2024) – Environmental controls on isolated convection during the Amazonian wet season, **24**, 8529-8548, *Atmospheric Chemistry & Physics.*

Tang, M., G. Torri, N. Sakaeda (2024) – The role of cold pool in modulating convective organization during the MJO, *Geophysical Research Letters*, **51**, e2023GL108050.

Wiggins, R. M., B. R. Lintner, Y. Serra, A.M. Duran-Quesada, M. Garbanzo-Salas, D. Hernandez-Deckers, G. Torri (2023) – Tropical easterly waves over Costa Rica and their relationship to the diurnal cycle of rainfall, *Geophysical Research Letters,* **50**, e2023GL104159.

Brennis, T., N. Lautze, R. Whittier, G. Torri, D. Thomas (2023) – Understanding the origins of and influences on precipitation of major ion chemistry on the Island of Oʻahu, Hawaiʻi, *Envir. Monit. Assess*., 195:1265

Sakaeda, N., G. Torri (2023) – The observed effects of cold pools on convection triggering and organization during DYNAMO/AMIE, *J. Geoph. Res. Atmos.*, 128, e2023JD038635

Torri, G., A.D. Nugent, B.N. Popp (2023) – The isotopic composition of rainfall on a subtropical mountainous island, *J. Hydrometeor.*, **24**, 761–781

Hatanaka, Y., Y. Glaser, G. Galgon, G. Torri, P. Sadowski (2023) – Diffusion models for high-resolution solar forecasts, *arXiv:2302.00170*

Torri, G. (2022) – Isotopic equilibration in convective downdrafts, *Geophysical Research Letters*, 49, e2022GL098743.

Sakaeda, N., G. Torri (2022) – The behaviors of intraseasonal cloud organization during DYNAMO/AMIE, *J. Geoph. Res. Atmos.,* 127, e2021JD035749.

Stuecker, M., C. Karamperidou, A.D. Nugent, G. Torri, S. Coats, S. Businger (2021) – Comments on "The financial dilemma of students pursuing an atmospheric science graduate degree in the United States", *Bull. Amer. Met. Soc.*, **102**, 323-324.

Torri, G. (2021) – On the isotopic composition of cold pools in radiative-convective equilibrium, *J. Geophys. Res. Atmos.* **126**.

Tachera, D., N. Lautze, G. Torri, D. Thomas (2021) – Characterization of the isotopic composition and bulk ion deposition of precipitation from Central to West Hawaiʻi Island between 2017 and 2019, *J. Hydro: Regional Studies,* **34**, 100786

Dores, D., E., C. R. Glenn, G. Torri, R. B. Whittier, B. N. Popp (2020) – Stable isotopic composition of precipitation on Oahu, Hawaii, during the 2017-2018 La Niña and implications for groundwater recharge. *Hydrological Processes*. **34:34**: 4676-4696.

Torri, G., D. K. Adams, H. Wuang, Z. Kuang (2019) – On the diurnal cycle of GPS-derived column water vapor over Sumatra, *Journal of the Atmospheric Sciences*, **76(11)**, https://doi.org/10.1175/JAS-D-19-0094.1.

Torri, G. and Z. Kuang (2019) – On cold pool collisions in tropical boundary layers, *Geophysical Research Letters*, **46**, doi: 10.1029/2018GL080501

Zuidema, P., G. Torri, C. Muller, A. Chandra (2017) – A survey of precipitation-induced atmospheric cold pools over oceans and their interactions with the larger-scale environment, *Surveys in Geophysics*, **38(6)**, 1283-1305.

Torri, G., D. Ma, and Z. Kuang (2017) – Stable water isotopes and large-scale vertical motions in the tropics, *J. Geophys. Res. Atmos.*, **122**, 3703-3717.

Torri, G. and Z. Kuang (2016) – Rain evaporation and moist patches in tropical boundary layers, *Geophysical Research Letters*, **43(18)**.

Torri, G. and Z. Kuang (2016) – A Lagrangian study of precipitation-driven downdrafts, *J. Atmos. Sci.*, **73**, 839-854.

Gentine, P., A. Girelli, S. Park, J. Nie, G. Torri and Z. Kuang (2016) – Role of surface heat fluxes underneath cold pools, *Geophysical Research Letters.*, **43**, 874-883.

Torri, G., Z. Kuang and Y. Tian (2015) – Mechanisms for convection triggering by cold pools, *Geophysical Research Letters*, **42(6)**, 1943-1950.

Ph.D. work in Theoretical Physics (authors in alphabetical order)

J. Davey, A. Hanany, N. Mekareeya, G. Torri (2011) – M2-branes and Fano 3-folds, *J. Phys. A*, **44**, 40.

A. Hanany, G. Torri – Brane tilings and supersymmetric gauge theories (2011), *Nucl. Phys. Proc. Suppl.*, **216,** 1, 270-272.

A. Hanany, E. E. Jenkins, A. V. Manohar, G. Torri (2011) – Hilbert series for flavor invariants of the Standard Model, *J. High En. Phys.*, **2011**, 3, 96.

J. Davey, A. Hanany, N. Mekareeya, G. Torri (2010) – Brane tilings, M2-branes and Chern-Simons theories, *Acta Phys. Pol. B Proc. Suppl.*, **2**, 3, 639-655.

I. R. Klebanov, G. Torri (2010) – M2-branes and AdS/CFT, *Int. J. Mod. Phys. A*, **25**, 2-3, 332-350.

J. Davey, A. Hanany, N. Mekareeya, G. Torri (2009) – Higgsing M2-branes, *J. High En. Phys.*, **2009**, 11, 28.

J. Davey, A. Hanany, N. Mekareeya, G. Torri (2009) – Phases of M2-branes, *J. High En. Phys.*, **2009**, 6, 25.

A. Hanany, N. Mekareeya, G. Torri (2008) – The Hilbert series of Adjoint SQCD, *Nucl. Phys. B*, **825**, 1-2, 52-97.

ACTIVE GRANTS

Lead/Sole PI

$196,881	Satellites, Rocket Exhaust, and Space Debris in the Upper Atmosphere: A New Frontier of Climate Change, *Gordon and Betty Moore Foundation*	2025-27
$699,648	CAREER: Investigating Climate Variability in Hawai'i through Scientific and Indigenous Approaches, *NSF*	2024-26
$290,165	RII Track-4: Improving subseasonal-to-seasonal forecasts of Central Pacific extreme hydrometeorological events and their impacts in Hawai'i, *NSF*	2024-26
$168,845	RAPID: Investigating drivers and improving forecasts of subseasonal-to-seasonal wildfire potential in Hawai'i, *NSF*	2023-26
$505,472	Initiation of deep convection by boundary-layer circulations during TRACER, *DOE*	2023-26
$875,486	An evaluation of the NextGen National Water Model in tropical conditions with the aim of improving hyperlocal flood forecasting, *NOAA*	2022-26
$202,667	A new approach to studying supercell storms: the use of water isotopes, *Merage Foundation*	2021-26

Co-I

$499,279	Understanding Regional Drivers of Drought in a Non-Stationary Climate and Improving Drought Indicators for Agroforestry in the Pacific Islands, *NIDIS*	2025-27
$2,992,412	Creating the framework for the next generation Energy Exascale Earth System Model (E3SM) at PROCEED, *DOE*	2025-27

$828,199	Understanding diurnal rainfall processes over tropical islands to improve subseasonal-to-seasonal forecasts, *NOAA*	2022-26

Senior Personnel

$20,000,000	RII Track-1: Change Hawai'i; harnessing the data revolution for island resilience, *NSF*	2022-27

TEACHING EXPERIENCE

Graduate Level

ATMO 620: Physical Meteorology Fall 2018 – present
- Focus on atmospheric thermodynamics, cloud microphysics, and atmospheric radiation.
- Strong emphasis on foundational physical concepts

ATMO 606: Cumulus Dynamics Spring 2021
- Revamped the course after not being offered for more than a decade
- Restructured the content to include advanced topics on the subject
- Integrated recent journal articles and invited authors for expert discussions with students

ATMO 765: Seminars in Meteorology Spring 2020
- Invited voice coaches and opera singers to teach students breathing and voice control techniques

Undergraduate Level

ATMO 304: Global and Local Perspectives on Severe Weather Spring 2023
- Developed the course blending scientific and cultural perspectives place-based learning techniques.
- High student engagement with several students pursuing careers in meteorology because of the class.

ATMO 305: Meteorological Analysis and Observations Spring 2022
- Used experiential learning techniques to help students connect theoretical concepts to real-world atmospheric phenomena (e.g., using a sling psychrometer to measure wet-bulb temperature).

ATMO 412: Meteorological Analysis and Forecasting Spring 2020-2024
- Implemented state-of-the-art software (CAVE) for meteorological forecasting and analysis.
- Combined problem-solving sessions with case studies on real-world weather events.

ATMO 416: Tropical Analysis and Forecasting Spring 2019
- Stimulated student engagement through hands-on analysis of tropical weather systems and mesoscale phenomena, enhancing their practical forecasting abilities.
- Helped prepare students for careers in tropical meteorology, with one student now working as a weather forecaster in American Samoa.

AWARDS AND RECOGNITIONS

Board of Regents Excellence in Teaching Award (nominated)	2025
Board of Regents Excellence in Teaching Award (nominated)	2024
School of Ocean and Earth Sciences and Technology Teaching Award	2024
NSF CAREER Award	2024

Italian Excellence Award	2023
Board of Regents Excellence in Teaching Award (nominated)	2021
American-Made Challenges Solar Forecasting Prize	2021
Innovation2Impact Initiative Award	2021
University of Hawai'i Venture Competition (2nd place)	2021
Winner of the Pacific Asian Center for Entrepreneurship Innovation Challenge	2021
Winner of the University of Hawai'i Innovation Impact Challenge	2020
The Foundation Blanceflor Boncompagni Ludovisi, née Bildt Scholarship	2015
Harvard University Center for the Environment – Ziff Environmental Fellowship	2012–14
Fondazione Angelo dalla Riccia Scholarship	2011–12

INVITED PRESENTATIONS

A Lagrangian view of deep convective clouds, **Tohoku University**, Sendai, Japan	2025
From clouds to communities: a multi-scale approach delivering actionable science for island resilience, **Monash University**, Australia	2025
The isotopic composition of rainfall on a subtropical island, **National Center for Atmospheric Research** (CGD group), Boulder, USA	2023
Using stable water isotopes to study atmospheric convection, **Tohoku University**, Sendai, Japan	2023
Water vapor isotopes and atmospheric dynamics, **University of Iowa**, Iowa City	2023
Studying deep convection using stable water isotopes, **EUREC4A-iso Workshop**	2022
Modeling cold pools, **Tropical Pacific Observing Needs Workshop**	2021
The isotopic composition of cold pools, **ATOMIC group**	2020
The physics of atmospheric convection, **Durham University**, Durham, UK	2020
Cold pool dynamics: a Lagrangian view, **Università degli Studi di Milano – Bicocca**, Milan, Italy	2019
Studying deep convective clouds with a Lagrangian model, **Woods Hole Oceanographic Institute**, Woods Hole, USA	2018
Studying deep convective clouds with a Lagrangian model, **Colorado State University**, Fort Collins, USA	2018
On the dynamics of precipitation-driven downdrafts, **Ludwig-Maximilian Universität**, Munich, Germany	2017
Studying cold pools with a Lagrangian approach, **University of Washington**, Seattle	2016
A Lagrangian perspective on cold pool dynamics, **Max-Planck-Institut für Meteorologie**, Hamburg, Germany	2016
Studying convective triggering mechanisms with a Lagrangian particle model, **Massachusetts Institute of Technology**, Cambridge, USA	2014

PROFESSIONAL SERVICE

Departmental/School Service

Chair Assistant Professor Hiring Committee 2023–24
Department of Atmospheric Sciences, University of Hawai'i at Mānoa

- Led a successful hiring process for a tenure-track position in climate science, collaborating with colleagues across departments to evaluate candidates.

Member Dean Search Advisory Committee, 2022
School of Ocean and Earth Science and Technology, University of Hawai'i at Mānoa

- Developed the criteria for the selection of the school's dean, examined numerous applications, and participated in several interviews with finalists.

Member Curriculum Committee 2019–23
Department of Atmospheric Sciences, University of Hawai'i at Mānoa

- Reviewed courses, aligned program offerings with strategic goals, and analyzed student feedback.

Member Graduate Student Research Committees 2018–present
University of Hawai'i at Mānoa and other universities

- Served/serving as a member of 28 graduate student research committees, helping to mentor students' research and monitor their progress.

Member Cyberinfrastructure Faculty Advisory Committee 2018–present
University of Hawai'i at Mānoa

- Strategic planning, assessment of needs, and policy development for the University's high-performance computing infrastructure

Professional Service

Member NSF Unidata Strategic Advisory Committee 2023–present

- Contributes to creating company policies that consider high-level, long-term trends to anticipate the geoscience community's needs.

Organizer AGU Fall Meeting 2018–present

- Organized and chaired session "Atmospheric Convection: Processes, Dynamics, and Links to Weather and Climate".
- More than 100 attendees on average.

Reviewer Various journals and funding agencies 2012–present

- Geophysical Research Letter, Journal of the Atmospheric Sciences, Journal of Geophysical Research, Journal of Climate, Nature, and various proposals for the National Science Foundation, the National Oceanic and Atmospheric Administration, and the Department of Energy.

PROFESSIONAL MEMBERSHIP

Member 2012–present

- American Geophysical Union
- American Meteorological Society
- Associazione Italiana di Scienze dell'Atmosfera e Meteorologia
- Società Italiana di Meteorologia

ENTREPRENEURSHIP

Co-founder *Nimbus AI LLC* 2021–present

- Led the development of cutting-edge AI tools to forecast solar irradiance in areas with complex terrain.
- Participated in several incubator programs and partnered with academic institutions to develop and implement Nimbus AI's technology.