

LOUIS RIVOIRE, Ph.D.

Postdoctoral Associate
Massachusetts Institute of Technology

lrivoire@mit.edu
lrivoire.github.io

EDUCATION

| | |
|--|-----------|
| Ph.D., Atmospheric Science Colorado State University, <i>Fort Collins, CO</i> | 2020 |
| M.S., Ocean, Atmosphere, Climate, and Remote Sensing Sorbonne University, <i>Paris, France</i> | 2015 |
| Diplôme de l'Ecole Normale Supérieure Advanced interdisciplinary research training, <i>Paris, France</i> | 2015 |
| B.S., Earth Sciences Ecole Normale Supérieure, <i>Paris, France</i> | 2013 |
| Classe Préparatoire aux Grandes Ecoles Intensive program in mathematics, physics, life sciences, and humanities, <i>Lyon, France</i> | 2010-2012 |

PROFESSIONAL EXPERIENCE

| | |
|--|---------------------|
| Postdoctoral Associate Massachusetts Institute of Technology, <i>Cambridge, MA</i> Department of Earth, Atmospheric, and Planetary Sciences | since Jan 2024 |
| Flight Mission Consultant Jet Propulsion Laboratory, California Institute of Technology, <i>Pasadena, CA</i> Providing expertise for the development of a satellite mission | Dec 2021 - Nov 2023 |
| Postdoctoral Fellow Harvard University, <i>Cambridge, MA</i> Department of Earth and Planetary Sciences | Jul 2020 - Dec 2023 |
| Note: significant disruptions in employment due to covid-19 and U.S. visa processing issues | |
| Graduate Research and Teaching Assistant Colorado State University, <i>Fort Collins, CO</i> Department of Atmospheric Sciences | Aug 2015 - May 2020 |
| Climate Dynamics Intern Colorado State University, <i>Fort Collins, CO</i> | Mar - Jul 2015 |
| Atmospheric Chemistry Intern National Center for Atmospheric Research, <i>Boulder, CO</i> | Mar - Jul 2014 |

PUBLICATIONS

Published

6. **L. Rivoire**, M. Linz, P. Lin, J.N. Neu, M.L. Santee, Satellite nadir-viewing geometry affects the magnitude and detectability of long-term trends in stratospheric ozone, *Atmos Chem and Phys*, 2025.

5. H. Garny and co-authors including **L. Rivoire**, Age of stratospheric air: Progress on processes, observations and long-term trends, *Reviews of Geophysics*, 2024.
4. **L. Rivoire**, M. Linz, J. Li, Observational limitations to the emergence of climate signals, *Geophys. Res. Lett.*, 2024.
3. **L. Rivoire**, T. Birner, J. A. Knaff, N. Tourville, Quantifying the radiative impact of clouds on tropopause layer cooling in tropical cyclones, *Journal of Climate*, 2020.
2. W. J. Randel, **L. Rivoire**, L. L. Pan, S. Honomichl, Dry layers in the tropical troposphere observed during CONTRAST and global behavior from GFS analyses, *J. Geophys. Res.*, 2016.
1. **L. Rivoire**, T. Birner, J. A. Knaff, Evolution of the upper-level thermal structure in tropical cyclones, *Geophys. Res. Lett.*, 2016.

In review/preparation

L. Rivoire, J. Curbelo, M. Linz, Tracking the atmospheric jets as Lagrangian objects, *under review at Nat. Commun. Earth & Env.*

L. Rivoire, S. Eastham, A. Fiore, J. Curbelo, co-authors, Towards agnostic measures of tracer dispersion, *in preparation for JAMES*.

AWARDS, HONORS, AND GRANTS

Visiting Scientist Grant

Sep - Oct 2023

International Programme for Research in Groups, Center for Mathematical Research
Universitat Autònoma de Barcelona, *Barcelona, Spain*

Travel Grant

2019

19th Cyclone Workshop, *Kloster Seeon, Germany*

Programs of Research and Scholarly Excellence Award

2015

Colorado State University, *Fort Collins, CO*

TEACHING AND MENTORING

Research Mentoring Training Certificate

2024

Massachusetts Institute of Technology, *Cambridge, MA*

Leadership and Professional Strategies & Skills Training Certificate

2024

Massachusetts Institute of Technology, *Cambridge, MA*

Student Research Advisor

2022

Harvard College, *Cambridge, MA*

Graduate Student Mentor

2022

Harvard University, *Cambridge, MA*

Teaching Assistant, Atmospheric Dynamics II

2016

Colorado State University, *Fort Collins, CO*

Student Intern Advisor

2016, 2019

Colorado State University, *Fort Collins, CO*

CONFERENCE PRESENTATIONS

Orals

| | |
|---|------------------------|
| American Meteorological Society Annual Meeting | 2022, 2025 (2) |
| European Geosciences Union General Assembly, <i>Vienna, Austria</i> | 2022, 2023, 2024, 2025 |
| American Meteorological Society Conference on Hurricanes and Tropical Meteorology | 2016, 2021 |
| 19th Cyclone Workshop, <i>Kloster Seeon, Germany</i> | 2019 |
| Front Range Tropical Cyclone Workshop, <i>Fort Collins, CO</i> | 2018 |
| NOAA Center for Satellite Applications and Research Symposium, <i>Madison, WI</i> | 2018 |

Posters

| | |
|--|------------------|
| American Geophysical Union Fall Meeting | 2016, 2022, 2024 |
| Stratospheric Processes And their Role in the Climate (SPARC) General Assembly, <i>Boulder, CO</i> | 2022 |
| American Meteorological Society Conf. on Hurricanes and Tropical Meteo., <i>Ponte Vedra, FL</i> | 2018 |
| Young Scientist Symposium on Atmospheric Research, <i>Fort Collins, CO</i> | 2015 |

INVITED LECTURES AND SEMINARS

| | |
|--|------|
| Universitat Autònoma de Barcelona, Center for Mathematical Research, <i>Barcelona, Spain</i> | 2023 |
| French and German Consulates, <i>Boston, MA</i> | 2021 |
| Colorado State University, Department of Atmospheric Science, <i>Fort Collins, CO</i> | 2021 |
| National Center for Atmospheric Research, <i>Boulder, CO</i> | 2019 |
| Colorado State University, Department of Atmospheric Science, <i>Fort Collins, CO</i> | 2016 |

SERVICE AND LEADERSHIP

Peer review

| | |
|---|------------|
| Research Opportunities in Space and Earth Science (ROSES) panel NASA Headquarters, <i>Washington, D.C.</i> | 2017, 2019 |
|---|------------|

| | |
|--|------------------------|
| Student Proposals for Harvard College Research Program Harvard University, <i>Cambridge, MA</i> | 2022, 2023, 2024, 2025 |
|--|------------------------|

Manuscripts (see [Publons](#)):

| | | | |
|----------------------------|---------------------------|-------------------|-----------------------|
| Nature Reviews Earth & Env | Nature Communications | J Geophys Res | Bull Am Meteorol Soc |
| Atmos Sci Lett | Q J R Meteorol Soc | Atmos Chem Phys | Int J Climatol |
| Ann Geophys | Marine Pollution Bulletin | Int J Remote Sens | Earth & Space Science |

Professional meetings

| | |
|--|------------------|
| Session Lead Convener European Geosciences Union General Assembly, <i>Vienna, Austria</i> | 2023, 2024, 2025 |
|--|------------------|

| | |
|---|------------|
| Student Poster Award Judge European Geosciences Union General Assembly, <i>Vienna, Austria</i> | 2023, 2025 |
| American Meteorological Society Annual Meeting, <i>New Orleans, LA</i> | 2024 |