

Raphael Rousseau-Rizzi

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Raphael Rousseau-Rizzi

Research Interests

Climate Variability, Tropical Meteorology, Atmospheric Radiation and Thermodynamics, Geophysical Fluid Dynamics.

Education

Massachusetts Institute of Technology

Ph.D. in Meteorology: The Causes of Atlantic Hurricane Activity Multidecadal Variability

Thesis committee: K. Emanuel, T. Cronin, D. McGee, A. Evan.

2016 – 2021

Cambridge, USA

McGill University

M.S. in Atmospheric Sciences: Initiation of Deep Convection Over an Idealized Mesoscale Convergence Line

Advisors: D. Kirshbaum, M. K. Yau.

2014 – 2016

Montréal, Canada

Institut Supérieur de l'Aéronautique et de l'Espace

Student Visit

Coursework and Airbus Transsonic Air Inlet Design project.

Winter 2013

Toulouse, France

École Polytechnique de Montréal

Ba. of Aerospace Engineering

Coursework and PWC Aerodynamic Compressor Design project.

2010 – 2014

Montréal, Canada

Peer-reviewed Publications

- (2020) *In prep.*, **Rousseau-Rizzi, R.**, Emanuel, K.: An Evaluation of the Causes of Potential Intensity Variability in the Tropics.
- (2020) *In prep.*, **Rousseau-Rizzi, R.**, Emanuel, K.: A Weak Temperature Gradient Framework to Quantify the Causes of Potential Intensity Variability in the Tropics.
- (2020) *In prep.*, Merlis, T., **Rousseau-Rizzi, R.** et al.: CAPE PI.
- (2020) *Early Online Release*, **Rousseau-Rizzi, R.** et al.: A Thermodynamic Perspective on Steady-State Tropical Cyclones, *Journal of the Atmospheric Sciences*.
- (2020) Emanuel, K., **Rousseau-Rizzi, R.**: Reply to “Comments on ‘An Evaluation of Hurricane Superintensity in Axisymmetric Numerical Models’”, *Journal of the Atmospheric Sciences*, **77**, 3977–3980.
- (2020) **Rousseau-Rizzi, R.**, Emanuel, K.: Reply to “Comments on ‘An Evaluation of Hurricane Superintensity in Axisymmetric Numerical Models’”, *Journal of the Atmospheric Sciences*, **77**, 1893–1896.
- (2019) **Rousseau-Rizzi, R.**, Emanuel, K.: An Evaluation of Hurricane Superintensity in Axisymmetric Numerical Models, *Journal of the Atmospheric Sciences*, **76**, 1697–1708.
- (2017) **Rousseau-Rizzi, R.** et al.: Initiation of Deep Convection Over an Idealized Mesoscale Convergence Line, *Journal of the Atmospheric Sciences*, **74**, 835–853.

Conference Presentations

AGU fall meeting

Estimating the Causes of Past Atlantic Tropical Cyclone Multidecadal Variability

December 2020

Remote

AMS annual meeting

Steady-State Tropical Cyclones in Axisymmetric Numerical Models (poster)

January 2020

Boston, USA

Conference on atmospheric and oceanic fluid dynamics

An Evaluation of Hurricane Superintensity in Axisymmetric Numerical Models

June 2019

Portland, USA

AGU fall meeting

An Evaluation of Hurricane Superintensity in Axisymmetric Numerical Models

December 2018

Washington, USA

50th CMOS Congress

The Transition from Shallow-to-Deep Cumulus Convection Over an Idealized Mesoscale Convergence Zone

May 2016

Fredericton, Canada

AGU fall meeting

The Shallow-to-Deep Convective Transition Over an Idealized Mesoscale Convergence Zone

December 2015

San Francisco, USA

AMS 16th Conference on Mesoscale Processes

The Shallow-to-Deep Convective Transition Over an Idealized Mesoscale Convergence Zone (poster)

August 2015

Boston, USA

Fellowships and Awards

- (2019) **Advanced Study Program Graduate Fellow**, National Center for Atmospheric Research
- (2017-2018) **Wade Fellow**, MIT Department of Earth, Atmospheric and Planetary Sciences
- (2016-2017) **Rasmussen Fellow**, MIT Department of Earth, Atmospheric and Planetary Sciences
- (2016-2019) **PGS-D Fellow**, Natural Sciences and Engineering Research Council of Canada
- (2016-2019) **3rd Cycle Scholarship**, Fonds de recherche du Québec – Nature et technologies (awarded and declined in favor of PGS-D fellowship)
- (2014) **Distinction of Academic Excellence**, École Polytechnique de Montréal
- (2014) **Welcome Award of Excellence**, École Polytechnique de Montréal

Service

Reviewer for Journals <i>JAS, MWR, GRL</i>	2019 – Present USA
MIT, Program in Atmospheres, Oceans and Climate Colloquium Series <i>Member of the organizing committee</i>	July 2020 – Present Cambridge, USA
MIT Towards Diversity and Inclusion in EAPS <i>Mentor for Underrepresented Minority Applicants</i>	Fall 2020 Cambridge, USA
MIT, EAPS Student Advisory Council <i>Secretary</i>	July 2020 – Present Cambridge, USA
Graduate Climate Conference <i>Member of the organizing committee</i>	Fall 2019 Woods Hole, USA
MIT, Program in Atmospheres, Oceans and Climate Student and Post-doc Seminar <i>Head of the organizing committee</i>	May 2018 – May 2020 Cambridge, USA
MIT, Program in Atmospheres, Oceans, and Climate 2017 Retreats <i>Co-organized 2017 PAOC retreat for the professors, post-docs and students of the program</i>	Jan 2017 – Oct 2017 North Conway, USA
McGill University, Council of Atmospheric and Oceanic Sciences <i>Departmental representative</i>	Sept 2015 – Sept 2016 Montréal, Canada
McGill University, Council of Atmospheric and Oceanic Sciences <i>Treasurer</i>	Sept 2015 – Sept 2016 Montréal, Canada
McGill University <i>Promotion of atmospheric sciences studies in francophone schools of Quebec</i>	Fall 2015 Montréal, Canada

Teaching Experience

MIT Teaching and Learning Laboratory <i>Kaufman teaching certificate program</i> MIT Program aimed at improving teaching skills.	Sept 2020 – Dec 2020 Cambridge, USA
PAOC, MIT <i>Teaching Assistant in 12.811, Tropical Meteorology</i> Prof. Kerry Emanuel.	Feb 2019 – May 2019 Cambridge, USA
PAOC, MIT <i>Teaching Assistant in 12.842, Climate Physics and Chemistry</i> Prof. Kerry Emanuel.	Sept 2018 – Dec 2018 Cambridge, USA
PAOC, MIT <i>Teaching Assistant in 12.842, Climate Physics and Chemistry</i> Prof. Kerry Emanuel.	Sept 2017 – Dec 2017 Cambridge, USA
AOS, McGill University <i>Teaching Assistant in ATOC 184, Science of Storms</i> Prof. Eyad Atallah.	Jan 2016 – April 2016 Montréal, Canada
AOS and EPS, McGill University <i>Teaching Assistant in ATOC 185, Natural Disasters</i> Prof. John Gyakum and Prof. John Stix.	Sept 2015 – Dec 2015 Montréal, Canada

Professional Experience

Hydro-Quebec Research Institute (IREQ) <i>Engineering</i> Measurement and data systems integration internship	Apr 2011 – Aug 2011 Montréal, Canada
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Computer Skills

OS: Linux, Unix, Windows

Programming: Matlab, Python, Fortran 77/90

Language Skills

Native: French, **Fluent:** English, **Beginner:** Spanish

Interests

Weather Forecasting (Wx Challenge), Running, Reading, Rock Climbing, Singing, Sailing, Cooking.