

Patrick Martineau, Ph.D.

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Academic Employment

- Postdoctoral scholar, UCLA, 2016-present
Supervisor: Prof. Gang Chen
- Postdoctoral Research Associate, Cornell University 2015-2016
Supervisor: Prof. Gang Chen
- Undergraduate Research Assistant, Department of Atmospheric and Oceanic Sciences, McGill University, May 2007 - September 2007.

Education

- Ph.D Atmospheric And Oceanic Sciences, McGill University, 2015
Supervisor : Prof. Seok-Woo Son
- M.Sc Atmospheric And Oceanic Sciences, McGill University, 2011
Supervisor : Prof. Seok-Woo Son
- B.Sc (Honours) Atmospheric And Oceanic Sciences, McGill University, February 2009

Research Interests

- Weather extremes: blocking events, interannual to multidecadal variability and trends
- Stratospheric variability and stratosphere-troposphere coupling
- Assessment of reanalysis datasets

Teaching

- Guest lecturer for three classes of the introductory atmospheric dynamics class Atmospheric Dynamics (EAS3420), Cornell University

Research

Submitted work

- Martineau Patrick, Gang Chen and D. Alex Burrows. 2016. Wave events: climatology and relationship to Northern Hemisphere winter blocking and weather extremes. *In press*

Peer-reviewed publications

- Fujiwara, M., and Coauthors, 2016: Introduction to the SPARC Reanalysis Intercomparison Project (S-RIP) and overview of the reanalysis systems. *Atmos. Chem. Phys. Discuss.*, 1–52, doi:10.5194/acp-2016-652
- Martineau, P., S.-W. Son, and M. Taguchi, 2016: Dynamical Consistency of Reanalysis Datasets in the Extratropical Stratosphere. *J. Clim.*, 29, 3057–3074, doi:10.1175/JCLI-D-15-0469.1.
- Martineau, P., and S.-W. Son, 2015: Onset of Circulation Anomalies during Stratospheric Vortex Weakening Events: The Role of Planetary-Scale Waves. *J. Clim.*, 28, 7347–7370, doi:10.1175/JCLI-D-14-00478.1.
- Martineau, P., and S.-W. Son, 2013: Planetary-scale wave activity as a source of varying tropospheric response to stratospheric sudden warming events: A case study. *J. Geophys. Res. Atm.*, 118, doi:10.1002/jgrd.50871.
- Martineau, P., and S.-W. Son, 2010: Quality of reanalysis data during stratospheric vortex weakening and intensification events. *Geophys. Res. Lett.*, 37, doi:10.1029/2010GL045237.

Presentations

- Martineau, P., G. Chen, A. Burrows, D. Xue and J. Lu, 2016: Finite-amplitude local wave activity as a diagnostic of persistent extreme weather, poster, DynVar Workshop, June 6-10, Helsinki, Finland
- Martineau, P., S.-W. Son and M. Taguchi, 2016: Dynamical consistency of reanalysis datasets in the extratropical stratosphere, oral, DynVar Workshop, June 6-10, Helsinki, Finland
- Martineau, P., G. Chen and A. Burrows, 2016: Finite-amplitude local wave activity as a diagnostic of blocking events and persistent extreme weather, oral, Workshop on Atmospheric Blocking, April 6-8, Reading, England
- Martineau, P., S.-W. Son and M. Taguchi, 2015: Dynamical consistency of reanalysis data sets in the extratropical stratosphere, poster, S-RIP Workshop, October 12-13, Paris, France
- Martineau, P., E. Gerber and coauthors, 2015: Chapter 6: Stratosphere-Troposphere Coupling, oral, S-RIP Workshop, October 12-13, Paris, France
- Martineau, P., S.-W. Son and M. Taguchi, 2015: How well do momentum diagnostics explain extratropical stratospheric variability in reanalysis datasets? oral, 18th Conference on Middle Atmosphere, AMS 2015, January 4-8, Phoenix, Arizona, USA
- Martineau, P. and S.-W. Son, 2015: Onset of circulation anomalies during stratospheric vortex weakening events: the role of planetary-scale waves. poster, AMS 2015 Phoenix, Arizona, January 4-8, USA
- Martineau, P. and S.-W. Son, 2014: Which reanalysis data is good for momentum diagnostics of the extratropical stratosphere? poster, SPARC Reanalysis Intercomparison Project (S-RIP) workshop, September 10-12, Maryland, USA
- Martineau, P. and S.-W. Son, 2013: The role of momentum forcing by planetary-scale waves in the onset of tropospheric circulation anomalies during stratospheric

sudden warming events, oral, 17th Conference on Middle Atmosphere, June 16-21, Newport, Rhode Island

- Martineau, P. and S.-W. Son, 2013: A spectral climatology of planetary-scale disturbances in the southern and northern hemispheres: present and future climate scenarios, poster, 17th Conference on Middle Atmosphere, June 16-21, Newport, Rhode Island
- Martineau, P. and S.-W. Son, 2013: The role of momentum forcing by planetary-scale waves in the onset of tropospheric circulation anomalies during stratospheric sudden warming events, poster, WCRP Regional Workshop on Stratosphere-Troposphere Processes and their Role in Climate, April 1-3, Kyoto, Japan
- Martineau, P. and S.-W. Son, 2012: Tropospheric response to stratospheric vortex weakening events and its inter-annual variability in the Northern Hemisphere cold season, oral, AGU 2012 fall meeting, December 3-7, San Francisco, California
- Martineau, P. and S.-W. Son, 2012: Downward propagation of Stratospheric Vortex Weakening events, oral, International Polar Year, From Knowledge to Action, April 23-27, Montreal, Canada
- Martineau, P. and S.-W. Son, 2012: Contrasting propagating and non-propagating Stratospheric Sudden Warming events, poster, Workshop on Stratospheric Sudden Warming and its Role in Weather and Climate Variations, February 22-24, Kyoto, Japan
- Martineau, P. and S.-W. Son, 2011: Quality of reanalysis data during stratospheric vortex weakening and intensification events, poster, Stratospheric Climate and Coupling Between the Stratosphere and Troposphere, 91st American Meteorological Society Annual Meeting, January 23-27, Seattle, WA
- Martineau, P. and S.-W. Son, 2010: Quality of Reanalysis Data during Stratospheric Extreme Events, poster, Stratospheric Processes and their Role in Climate, 3rd Joint CMOS-CGU Congress, May 31-June 4, Ottawa, Canada

Professional Activities

- Convener of “Atmospheric Circulation and Hydrological Cycle under a changing climate: Monsoons, Storm Tracks, and the ITCZ” (A106, AGU 2016)
- Co-lead of the chapter “Stratosphere–Troposphere Coupling” of the S-RIP project (<http://s-rip.ees.hokudai.ac.jp/report/structure.html>)

Peer review experience

- Journal of Climate
- Climate Dynamics
- Monthly Weather Review
- Journal of Geophysical Research : Atmospheres
- Annales Geophysicae (Copernicus)

Scholarships

- Sept 2011 – Sept 2014: Alexander Graham Bell Canada Graduate Scholarships (CGS D) (NSERC)
- Sept 2010 – Sept 2011: Master's research scholarship (FQRNT)
- Sept 2009 – Sept 2010: Alexander Graham Bell Canada Graduate Scholarship (CGS M) (NSERC)
- May 2008 – Sept 2008: Undergraduate Summer Research Award (NSERC)

Awards

- 2012 GEC3 Travel Grant
- 2011/2012 Environment Canada Atmospheric and Meteorological Graduate Supplements (Supplements CGS D)
- 2011 Peter-Zwack prize (CMOS)
- 2009 McGill's Dr. and Mrs. Milton Leong Graduate Student Award
- 2009 Sigma Xi : McGill Chapter Undergraduate Research Award
- 2009 First Class Honours in Atmospheric Science, J.S. Marshall Prize

Skills

- Language : French and English, elementary Japanese
- Operating System : Linux, Windows
- Programming : Matlab, Bash, Fortran, PHP, Javascript, IDL
- Presentation : Latex, HTML, CSS, OpenOffice, Word, PowerPoint, Illustrator

Memberships

- American Geophysical Union
- American Meteorological Society