

Martin S. Singh

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EDUCATION

Massachusetts Institute of Technology (MIT) MA, USA
Ph.D, Atmospheric science Jun 2014
Thesis title: “The response of moist convection and the atmospheric general circulation to climate warming”
Advisor: Paul A. O’Gorman

Monash University VIC, Australia
B.Sc. (Hons.), Atmospheric science/Mathematics Nov 2008

APPOINTMENTS

Harvard University, Dept. of Earth & Planetary Sciences MA, USA
Postdoctoral Fellow since Oct 2014

MIT, Dept. of Earth, Atmospheric & Planetary Sciences MA, USA
Postdoctoral Associate Jun - Sep 2014
Research Assistant 2010 - 2014

Monash University, School of Mathematical Sciences VIC, Australia
Research Assistant Jan - Jul 2009

PEER-REVIEWED PUBLICATIONS

Singh, M.S. & O’Gorman, P.A. (2014), Influence of microphysics on the scaling of precipitation extremes with temperature. *Geophys. Res. Lett.*, **41**, 6037–6044.

Singh, M.S. & O’Gorman, P.A. (2013), Influence of entrainment on the thermal stratification in simulations of radiative-convective equilibrium. *Geophys. Res. Lett.*, **40**, 4398–4403.

Davies, L., Jakob, C., Cheung, K., Del Genio, A.D., Hill, A.A., Hume, T., Keane, R.J., Komori, T., Larson, V.E., Lin, Y., Liu, X., Nielsen, B.J., Petch, J., Plant, R.S., **Singh, M.S.**, Shi, X., Song, X., Wang, W., Whittall, M.A., Wolf, A.B., Xie, S., & Zhang, G. (2013), A single-column model ensemble approach applied to the TWP-ICE experiment. *J. Geophys. Res.*, **118**, 6544-6563.

O’Gorman, P.A. & **Singh, M.S.** (2013), Vertical structure of warming consistent with an upward shift in the middle and upper troposphere. *Geophys. Res. Lett.*, **40**, 1838–1842.

Singh, M.S. & O’Gorman, P.A. (2012), Upward shift of the atmospheric general circulation under global warming: theory and simulations. *J. Climate*, **25**, 8259–8276.

O’Gorman, P.A., Lamquin, N., Schneider, T. & **Singh, M.S.** (2011), The relative humidity in an isentropic, advection-condensation model: Properties of subtropical minima and limited poleward influence. *J. Atm. Sci.*, **68**, 3079–3093.

Singh, M.S. & Hogg, A.McC. (2010), Viscous effects in two-layer, unidirectional hydraulic flow. *J. Fluid Mech.*, **644**, 371–394.

Submitted/in progress:

Singh, M.S. & O’Gorman, P.A. (2015), The entropy budget of moist convection over a wide range of surface temperatures, *in prep.*

Singh, M.S. & O’Gorman, P.A. (2014), Increase in moist-convective updraft velocities with warming in radiative-convective equilibrium, *Quart. J. Roy. Met. Soc.*, submitted.

Pfahl, S., O’Gorman, P.A. & **Singh, M.S.** (2014), Midlatitude cyclones in idealized simulations of changed climates., *J. Climate*, submitted.

AWARDS & HONORS

<i>AGU</i> Editor’s highlight: “Influence of entrainment on the thermal stratification in simulations of radiative-convective equilibrium”.	2013
Outstanding student oral presentation, Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society.	2013
Klein Fellowship, Dept. of Earth Atmospheric & Planetary Sciences, MIT.	2009
Vice-Chancellor’s Undergraduate Research Scholarship, Monash University.	2008
Honours Scholarship, Monash University.	2008
Summer Research Scholarship, Australian National University.	2007

INVITED PRESENTATIONS

Columbia University, SEAS Colloquium in Climate Science, NY, USA: Moist convection in different climates: lessons from radiative-convective equilibrium. Nov, 2014.

Max Planck Institut für Meteorologie, Joint Seminar, Hamburg, Germany: Moist convection in different climates: lessons from radiative-convective equilibrium. Sep, 2014.

MIT, MASS Seminar, MA, USA: The temperature dependence of moist convection: changes in updrafts and precipitation statistics in radiative-convective equilibrium. Feb, 2014.

Monash University, Monash Weather and Climate Seminar Series, VIC, Australia: The temperature dependence of moist convection. Jan, 2014.

University of New South Wales, CCRC Seminar Series, NSW, Australia: The temperature dependence of moist convection. Jan, 2014.

TEACHING EXPERIENCE

Teaching Assistant, MIT

Global warming science, online course development (EdX).	2014
Tropical meteorology (graduate).	2013
Introduction to atmosphere, ocean and climate dynamics (undergraduate).	2012

Tutor, Monash University

Fluid dynamics (undergraduate).	2008, 2009
Modeling & differential equations (undergraduate).	2008

SERVICE

Reviewer for Journal of Climate, Geophysical Research Letters, Journal of Geophysical Research, Journal of the Atmospheric Sciences.

Co-organizer of MIT Atmospheric Science Seminar Series, 2012-2014.

Public lecture: “Weather in a changing climate”, Boston Area Solar Energy Association, Jan 2012.

Co-organizer and Session Chair, Graduate Climate Conference, 2011.