

# Scott T. Salesky

## Curriculum Vitae

Department of Civil Engineering  
The University of British Columbia  
2002 - 6250 Applied Science Lane  
Vancouver, BC V6T 1Z4 Canada  
Tel: 1-778-288-4940 Fax: 1-604-822-6901  
Email: scott.salesky@ubc.ca

### RESEARCH INTERESTS

---

Turbulence, Atmospheric Boundary Layer, Large Eddy Simulation, Environmental Fluid Mechanics, Earth-Atmosphere Interactions, Multiphase Flows, Surface Hydrology, Evaporation

### EDUCATION

---

- 2014 **Ph.D. Atmospheric Science**  
The Pennsylvania State University, University Park, PA  
**Dissertation:** *"Monin-Obukhov similarity and convective organization in the unstable atmospheric boundary layer"*
- 2010 **M.S. Atmospheric Science**  
The Pennsylvania State University, University Park, PA  
**Thesis:** *"Similarity models of subfilter-scale energy and temperature variance for large eddy simulations of the atmospheric boundary layer."*
- 2008 **B.S. Science Education, Summa Cum Laude**  
Martin Luther College, New Ulm, MN

### PROFESSIONAL APPOINTMENTS

---

- 2014–present **Postdoctoral Fellow**  
Department of Civil Engineering  
The University of British Columbia
- 2008–2014 **Graduate Research Assistant**  
Department of Meteorology & Atmospheric Science  
The Pennsylvania State University

### HONORS AND AWARDS

---

- 2014 **Penn State Alumni Association Dissertation Award**  
The Pennsylvania State University
- 2014 **John C. Wyngaard Graduate Research Award**  
Department of Meteorology & Atmospheric Science  
The Pennsylvania State University
- 2007 **Barbara Klockziem Scholarship**  
Martin Luther College

## PEER-REVIEWED PUBLICATIONS

---

Li, D., **S.T. Salesky**, and T. Banerjee (2016) Connections between the Ozmidov scale and mean velocity profile in stably stratified atmospheric surface layers. *Journal of Fluid Mechanics*, **797**, R3. [DOI]

Banerjee, T., G.G. Katul, **S.T. Salesky**, and M. Chamecki (2014) Revisiting the formulations for longitudinal velocity variance in the unstable atmospheric surface layer. *Quarterly Journal of the Royal Meteorological Society*, **141(690)**:1699–1711. [DOI]

**Salesky, S.T.**, G.G. Katul, and M. Chamecki (2013) Buoyancy effects on the integral lengthscales and mean velocity profile in atmospheric surface layer flows. *Physics of Fluids*, **25**,105101. [DOI]

**Salesky, S.T.** and M. Chamecki (2012) Random errors in turbulence measurements in the atmospheric surface layer: implications for Monin-Obukhov similarity theory. *Journal of the Atmospheric Sciences*, **69(12)**:3700–3714. [DOI]

**Salesky, S.T.** and M. Chamecki (2012) A similarity model of subfilter-scale energy for large eddy simulations of the atmospheric boundary layer. *Boundary-Layer Meteorology*, **145(1)**:69–91. [DOI]

**Salesky, S.T.**, M. Chamecki, and N.L.Dias (2012) Estimating the random error in eddy-covariance based fluxes and other turbulence statistics: the filtering method. *Boundary-Layer Meteorology*, **144(1)**:113–135. [DOI]

## SUBMITTED MANUSCRIPTS<sup>†</sup>

---

Chamecki, M., N.L. Dias, **S.T. Salesky**, and Y. Pan (2016) Scaling laws for the longitudinal structure function in the atmospheric surface layer. Submitted to *Journal of the Atmospheric Sciences* on August 3, 2016.

**Salesky, S.T.**, M.G. Giometto, M. Chamecki, M. Lehning, and M.B. Parlange (2016) The transport and deposition of heavy particles in complex terrain: insights from an Eulerian model for large eddy simulation. Submitted to *Water Resources Research* on July 27, 2016.

Ghannam, K., T. Duman, **S.T. Salesky**, M. Chamecki, and G. G. Katul (2016) The nonlocal character of turbulence asymmetry in the convective atmospheric boundary layer. Submitted to *Quarterly Journal of the Royal Meteorological Society* on May 27, 2016.

**Salesky, S.T.**, M. Chamecki, and E. Bou-Zeid (2016) On the nature of the transition between roll and cellular organization in the convective boundary layer. Submitted to *Boundary-Layer Meteorology* on February 4, 2016.

## MANUSCRIPTS IN PREPARATION

---

**Salesky, S.T.**, M.G. Giometto, M. Lehning, and M.B. Parlange (2016) The preferential deposition of heavy particles in complex terrain. Submission to *Physics of Fluids* anticipated by November, 2016.

**Salesky, S.T.**, M.G. Giometto, A. Christen, and M.B. Parlange (2016) Scalar dispersion from point and area sources in realistic urban environments. Submission to *Atmospheric Environment* anticipated by December, 2016.

---

<sup>†</sup>Submitted manuscripts available upon request.

## INVITED TALKS

---

**Salesky, S.T.**, 2016. Coherent structures and turbulent transport in the atmospheric boundary layer: Insights from large eddy simulation. Department of Biological and Ecological Engineering Seminar. Oregon State University. April 29, 2016.

**Salesky, S.T.**, 2014. Turbulent transport and convective organization in the unstable atmospheric boundary layer. Fluids Laboratory Seminar. University of British Columbia. April 9, 2014.

**Salesky, S.T.**, 2011. Deviations from Monin-Obukhov similarity. Department of Meteorology 'Frank' Talk. The Pennsylvania State University, October 28, 2011.

## CONFERENCE PRESENTATIONS

---

**Salesky, S.T.**, M. Chamecki, and E. Bou-Zeid, 2016. On the nature of the transition from roll to cellular organization in the convective boundary layer. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Parlange, M.B., **S.T. Salesky**, M.G. Giometto, M. Chamecki, and M. Lehning, 2016. The preferential deposition of snow in complex terrain: an LES investigation. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Chamecki, M., Y. Pan, N.L. Dias, and **S.T. Salesky**, 2016. Scaling laws for structure functions in the lowest layers of the ABL. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Giometto, M.G., E. Trujillo, K.C. Leonard, T.L. Maksym, F. Comola, **S.T. Salesky**, C. Meneveau, M. Lehning, and M.B. Parlange, 2016. LES modeling of wind over Antarctic snow-ice formations using a dynamic surface roughness approach. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Ghannam, K., G.G. Katul, **S.T. Salesky**, and M. Chamecki, 2015. Closure of the heat flux budget with the ejection-sweep cycle in the convective boundary layer. Fall Meeting, AGU. San Francisco, CA, December 14-18, 2015.

**Salesky, S.T.**, M. Giometto, M. Chamecki, M. Lehning, and M.B. Parlange, 2015. The preferential deposition of snow in complex terrain: An LES investigation. Fall Meeting, AGU. San Francisco, CA, December 14-18, 2015.

**Salesky, S.T.**, M. Giometto, M. Chamecki, and M.B. Parlange, 2015. Blowing snow in complex terrain - an LES investigation. International Conference on Model Integration Across Disparate Scales in Complex Turbulent Flow Simulation. State College, PA, June 15-17, 2015.

Banerjee, T., G.G. Katul, **S.T. Salesky**, and M. Chamecki, 2014. Logarithmic scaling in the longitudinal velocity variance explained by a spectral budget in a neutral and unstable atmosphere. APS March Meeting, Denver, CO, March 3-7, 2014.

**Salesky, S.T.**, G.G. Katul, and M. Chamecki, 2013. Buoyancy effects on the mean velocity profile in atmospheric surface layer flows. 66th Annual Meeting, APS/DFD. Pittsburgh, PA, November 24-26, 2013.

**Salesky, S.T.** and M. Chamecki, 2012. Scatter in plots of Monin-Obukhov similarity functions: random errors or missing physics? American Meteorological Society 20th Symposium on Boundary Layers and Turbulence. Boston, MA, July 8-13, 2012.

Chamecki, M. and **S.T. Salesky**, 2012. A new approach to estimate random errors in turbulence

statistics. American Meteorological Society 20th Symposium on Boundary Layers and Turbulence. Boston, MA, July 8-13, 2012.

Chamecki, M., and **S.T. Salesky**, 2011. Spatial locality of turbulent fluxes: toward local flux-gradient relationships in the atmospheric surface layer. Fall Meeting, AGU. San Francisco, CA, December 5-9, 2011.

**Salesky, S.T.**, and M. Chamecki, 2011. Spatial locality of turbulent fluxes: the filtering approach. 64th Annual Meeting, APS/DFD. Baltimore, MD, November 20, 2011.

**Salesky, S.T.** and M. Chamecki, 2011: A similarity model of subfilter-scale scalar variance for large eddy simulations of the atmospheric boundary layer. 14th Annual Environmental Chemistry Student Symposium. The Pennsylvania State University, April 9, 2011.

**Salesky, S.T.** and M. Chamecki, 2010: A local model of the subfilter-scale energy for LES of the atmospheric boundary layer. 19th Symposium on Boundary Layers and Turbulence, Keystone, CO, August 6, 2010.

**Salesky, S.T.** and M. Chamecki, 2010: A similarity model of the subfilter-scale energy for LES of the ABL. John C. Wyngaard Symposium, The Pennsylvania State University, June 25, 2010.

## TEACHING EXPERIENCE

---

### The Pennsylvania State University

Spring, 2014    Substitute Lecturer, *Atmospheric Dynamics* (6 lectures)

Spring, 2013    Teaching Assistant, *Application of Computers to Meteorology*

Fall, 2008      Teaching Assistant, *Introductory Meteorology*

## PROFESSIONAL MEMBERSHIPS

---

American Geophysical Union

American Physical Society

American Meteorological Society

## OTHER PROFESSIONAL ACTIVITIES

---

Reviewer of manuscripts for *Advances in Water Resources*, *Agricultural and Forest Meteorology*, *Atmosphere*, *Atmospheric Measurement Techniques*, *Atmospheric Science Letters*, *Boundary-Layer Meteorology*, *Environmental Fluid Mechanics*, *Journal of the Atmospheric Sciences*, *Journal of Geophysical Research*, *Weather and Forecasting*

Session chair, 22nd Symposium on Boundary Layers and Turbulence (June 2016).

Invited attendee to The Burgers Program 2010 Research School in Fluid Dynamics, Topics in Turbulence (May 2010). Center for Scientific Computation and Mathematical Modeling, University of Maryland, College Park, MD

## PERSONAL

---

United States citizen

Last updated: September 17, 2016