

Personal information

Surname / First name **Serafin, Stefano**
Nationality Italian
Date and place of birth December 21, 1977 in Como (I)
Gender male

Current position

Affiliation Institut für Meteorologie und Geophysik, Universität Wien
Address Althanstraße 14 / UZA II / 2G507, A-1090 Wien, Austria
Telephone / Fax +43 1 4277 53711 / +43 1 4277 8 53711
Email stefano.serafin@univie.ac.at
Web <http://img.univie.ac.at/en/research/tm/staff/serafin/>
ORCID ID <http://orcid.org/0000-0002-5838-7514>
WoK ResearcherID <http://www.researcherid.com/rid/D-7660-2015>
Scopus Author ID <http://www.scopus.com/authid/detail.url?authorId=11939923400>

Work Experience

Oct. 2010 - present *Assistant professor ("Universitätsassistent, Post-Doc")*
Department of Meteorology and Geophysics, University of Vienna, Austria
Dec. 2002 - Sept. 2010 *Doctoral student, then Post-doctoral research associate*
Department of Civil and Environmental Engineering, University of Trento, Italy
Jun. 2002 - Nov. 2002 *Research consultant*
Department of Physics/CETEMPS, University of L'Aquila, Italy

Research interests

Mountain meteorology. Boundary layers over complex terrain. Dynamics of stratified flow over topography. Thermally-driven wind systems. Numerical weather prediction.

Research projects

As Principal Investigator:
2012-2016 FWF (Austrian Science Fund) Stand-alone project P24726-N27, *STABLEST: Stable boundary layer separation and turbulence*, € 208'482.75.
Participation to other projects:
2014 EU-FP7 RI HYDRALAB project *Influence of secondary orography on boundary-layer separation and rotors*.
2012-2016 DOD-MURI MATERHORN project, *Mountain terrain atmospheric modeling and observations*.
2005-2008 EU-INTERREG IIIB Alpine Space FORALPS project, *Meteo-hydrological forecast and observations for improved water resource management in the Alps*.
2006-2007 EU-INTERREG IIIB CADSES HYDROCARE project, *Hydrological cycle of the CADSES region*.
2004-2005 EU-INTERREG IIIB Alpine Space METEORISK project, *Mitigation of natural risks through improved forecasting of extreme meteorological events*.
2003 GEPRI project, *Spring frost in Trentino: climatology, micrometeorological characterization and applied modelling*, funded by the Autonomous Province of Trento, Italy.

Teaching

Courses

Lecturer at the Faculty of Earth Sciences, Geography and Astronomy, University of Vienna, in the B.Sc. and M.Sc. programmes in Meteorology, since Academic Year 2010-2011. Lecture and exercise courses in **Thermodynamics of the Atmosphere, Fundamentals of Atmospheric Modelling, Mesoscale Dynamics**; exercise courses in **Dynamics of the Atmosphere I, Dynamics of the Atmosphere II, Applied Numerical Methods in Meteorology, Micrometeorology**.

Assistant teacher and examiner at the Faculty of Engineering, University of Trento. Doctoral course in **Geophysical Fluid Dynamics**, A.Y. between 2012-2013 and 2014-2015. **Atmospheric Physics** course, M.Sc. programme in Environmental and Land Engineering, A.Y. between 2006-07 and 2008-09. **Meteorology** course, B.Sc. programme in Environmental Management Engineering, A.Y. between 2003-04 and 2008-09.

Supervision

Supervisor of 6 bachelor degrees at the Faculty of Earth Sciences, Geography and Astronomy, University of Vienna. Co-supervisor of 6 master and 4 bachelor degrees in Environmental and Land Engineering at the Faculty of Engineering of the University of Trento.

Other scientific activity

Reviewing

Referee for journals: Monthly Weather Review, Journal of the Atmospheric Sciences, Bulletin of the American Meteorological Society, Journal of Applied Meteorology and Climatology, Quarterly Journal of the Royal Meteorological Society, Journal of Geophysical Research (Atmospheres), Boundary-Layer Meteorology, Tellus-A, Atmospheric Research, Advances in Meteorology, Advances in Geophysics. **Referee for organizations:** CINECA (Italian National Supercomputing Centre).

Professional service

Since 2014, co-convenor of the session on "Atmospheric Processes over Complex Terrain" at the EGU annual meetings.

Professional memberships

American Meteorological Society, American Geophysical Union, European Geophysical Union.

Research visits

February 2015: Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, South Bend, IN (USA)

July and October 2014: Geophysical fluid mechanics laboratory, National Center for Meteorological Research, Météo France, Toulouse (France)

August-September 2014 and July-August 2012: Earth Observing Laboratory, National Center for Atmospheric Research, Boulder, CO (USA)

Education

Doctorate in **Environmental Engineering**

University of Trento, Trento (I), February 20th 2006.

Dissertation: *Boundary-layer processes and thermally driven flows over complex terrain*. Supervisor: Prof. Dino Zardi.

Degree in **Environmental Science**

University of Milano-Bicocca, Milan (I), March 12th 2002, full marks and honours.

Diploma di maturità scientifica (Scientific high school leaving certificate)

Liceo Scientifico Castelli, Saronno (I), July 1996, marks 52/60.

Language skills

Mother tongue

Self-assessment

European level*

English

German

Italian

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Proficient user	C2	Proficient user	C1	Proficient user	C1	Proficient user	C2	Proficient user
A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user

*Common European Framework of Reference (CEF) level

Stefano Serafin, publications (as of December 1, 2015)

Articles on peer-reviewed journals

- [1] **Serafin, S.**, S.F.J. De Wekker and J.C. Knierel (2015): A mesoscale model-based climatology of nocturnal boundary-layer characteristics over the complex terrain of north-western Utah. *Bound.-Layer Meteorol.*, in press.
<http://dx.doi.org/10.1007/s10546-015-0044-6>
- [2] Strauss, L., **S. Serafin** and V. Grubišić (2015): Atmospheric rotors and severe turbulence in a long deep valley. *J. Atmos. Sci.*, in press.
<http://dx.doi.org/10.1175/JAS-D-15-0192.1>
- [3] Strauss, L., **S. Serafin**, S.J. Haimov and V. Grubišić (2015): Turbulence in breaking mountain waves and atmospheric rotors estimated from airborne in situ and Doppler radar measurements. *Q. J. R. Meteorol. Soc.*, in press.
<http://dx.doi.org/10.1002/qj.2604>
- [4] Sachsperger, J., **S. Serafin** and V. Grubišić (2015): Lee waves on the boundary-layer inversion and their dependence on free-atmospheric stability. *Front. Earth Sci.*, **3**:70.
<http://dx.doi.org/10.3389/feart.2015.00070>
- [5] French, J.R., S.J. Haimov, L.D. Oolman, V. Grubišić, **S. Serafin**, and L. Strauss (2015): Wave-induced boundary-layer separation in the lee of the Medicine Bow Mountains. Part I: Observations. *J. Atmos. Sci.*, **72**, 4845-4863.
<http://dx.doi.org/10.1175/JAS-D-14-0376.1>
- [6] Grubišić, V., **S. Serafin**, L. Strauss, S.J. Haimov, J.R. French and L.D. Oolman (2015): Wave-induced boundary-layer separation in the lee of the Medicine Bow Mountains. Part II: Numerical modeling. *J. Atmos. Sci.*, **72**, 4865-4884.
<http://dx.doi.org/10.1175/JAS-D-14-0381.1>
- [7] Zardi, D., and **S. Serafin** (2015): An analytic solution for time-periodic thermally-driven slope flows. *Q. J. R. Meteorol. Soc.*, **141**, 1968-1974.
<http://dx.doi.org/10.1002/qj.2485>
- [8] **Serafin, S.** and D. Zardi (2011): Daytime development of the convective and mountain boundary layers under fair weather conditions: A comparison by means of idealized numerical simulations. *J. Atmos. Sci.*, **68**, 2128-2141.
<http://dx.doi.org/10.1175/2011JAS3610.1>
- [9] **Serafin, S.** and D. Zardi (2010): Daytime heat transfer processes related to slope flows and turbulent convection in an idealized mountain valley. *J. Atmos. Sci.*, **67**, 3739-3756.
<http://dx.doi.org/10.1175/2010JAS3428.1>
- [10] **Serafin, S.** and D. Zardi (2010): Structure of the atmospheric boundary layer in the vicinity of a developing upslope flow system: A numerical model study. *J. Atmos. Sci.*, **67**, 1171-1185.
<http://dx.doi.org/10.1175/2009JAS3231.1>
- [11] **Serafin, S.** and R. Ferretti (2007): Sensitivity of a mesoscale model to microphysical parameterizations in the MAP-SOP events IOP2b and IOP8. *J. Appl. Meteor. Climatol.*, **46**, 1438-1454.
<http://dx.doi.org/10.1175/JAM2545.1>

Reports and monographs

- [12] Arnold, D., D. Morton, I. Schicker, P. Seibert, M.W. Rotach, K. Horvath, J. Dudhia, T. Satomura, M. Müller, G. Zängl, T. Takemi, **S. Serafin**, J. Schmidli and S. Schneider (2012): Issues in high-resolution atmospheric modeling in complex topography – The HiRCoT workshop. *Croatian Meteorological Journal*, **47**, 3-11.
- [13] Arnold, D., D. Morton, I. Schicker, P. Seibert, M.W. Rotach, K. Horvath, J. Dudhia, T. Satomura, M. Müller, G. Zängl, T. Takemi, **S. Serafin**, J. Schmidli and S. Schneider (2012): High Resolution Modelling in Complex Terrain. Report on the HiRCoT 2012 Workshop, Vienna, 21-23 February 2012. BOKU-Met Report 21. Institut für Meteorologie, Universität für Bodenkultur, Wien. 44 pp. ISSN 1994-4179.
http://www.boku.ac.at/met/report/BOKU-Met_Report_21_online.pdf
- [14] **Serafin, S.** (2006): Boundary-layer processes and thermally driven flows over complex terrain. Università degli Studi di Trento. 194 pp. ISBN-10: 88-8443-131-X, ISBN-13: 978-88-8448-131-8.
http://www.ing.unitn.it/dica/eng/monographs/pdf/Monographs_9.pdf

Invited talks

- [15] **Serafin, S.**, L. Strauss, J. Sachsperger and V. Grubišić: Observations and modelling of atmospheric rotors. *Institute of Atmospheric Sciences and Climate, National Research Council of Italy, Bologna (I)*, 14.5.2015, invited by Dr. Silvio Davolio.

- [16] **Serafin, S.:** Daytime processes in the atmospheric boundary layer over mountainous terrain. *Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, IN (USA)*, 10.2.2015, invited by Prof. Harindra J.S. Fernando.
- [17] **Serafin, S., L. Strauss and V. Grubišić:** A case study of nonstationary boundary-layer separation and rotor formation. *National Center for Atmospheric Research, Boulder, CO (USA)*, 28.8.2012, invited by Dr Vanda Grubišić. *Department of Atmospheric Sciences, University of Wyoming, Laramie, WY (USA)*, 15.8.2012, invited by Dr. Samuel Haimov.
- [18] **Serafin, S.:** A modelling study of a nonstationary boundary-layer separation and rotor event. *Department of Meteorology and Geophysics, University of Innsbruck (A)*, 16.5.2012, invited by Prof. Alexander Gohm.
- [19] **Serafin, S.:** Idealized simulations of thermally driven winds over mountainous terrain. *Department of Geophysics, University of Zagreb (HR)*, 24.01.2012, invited by Prof. Branko Grisogono. *Department of Atmospheric Physics, Johannes-Gutenberg University of Mainz (D)*, 30.08.2011, invited by Prof. Volkmar Wirth. *Department of Meteorology and Geophysics, University of Vienna (A)*, 30.11.2010, invited by Prof. Leopold Haimberger.

Conference contributions

Over 70 in international and 15 in national conferences.