CURRICULUM VITAE

IVANA STIPERSKI
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EDUCATION

2010	Dr.Sc.	University of Zagreb, Faculty of Science, Department of Geophysics, Zagreb, Croatia. PhD studies (Physics of the Atmosphere and Ocean): "*Wave resonance and surface flow in the lee of complex orography*". Advisors: Prof. Vanda Grubišić (University of Vienna) and Dr. Branka Ivančan-Picek (Meteorological and Hydrological Service)
2004	M.Sc.	(Diploma in Physics) University of Zagreb, Faculty of Science, Department of Geophysics, Zagreb, Croatia (Physics-Geophysics): "*Tornadogenesis in Croatian airspace*". Advisor: Mag. Katarina Stanković

WORK EXPERIENCE

2022 – present	Assistant Professor of Atmospheric Turbulence, Department of Atmospheric and Cryospheric Sciences, University of Innsbruck, Austria
2019 – 2022	Ingeborg Hochmair Professor of Atmospheric Turbulence, Department of Atmospheric and Cryospheric Sciences, University of Innsbruck, Austria
2015 – 2019	Hertha-Firnberg Fellow, Department of Atmospheric and Cryospheric Sciences, University of Innsbruck, Austria
2017	Visiting Scientist at University of Utah, Salt Lake City, Utah (2 months)
2016	Visiting Scientist at University of Utah, Salt Lake City, Utah (4 months)
2011 – 2015	Post-doctoral Researcher (Universitätsassistentin), Department of Atmospheric and Cryospheric Sciences, University of Innsbruck, Austria
2010 – 2011	Research Associate, Meteorological and Hydrological Service, Croatia
2010	Visiting scientist at University of Vienna, Vienna, Austria (4 months)
2007	Visiting scientist at TIIMES, NCAR, Boulder, Colorado
2006	Visiting scientist at Desert Research Institute, Reno, Nevada (4 months)
2005	Visiting scientist at Czech Meteorological Institute, Prague, Czech Republic (2 months)
2005	Visiting scientist at Meteo-France, CNMR, GMAP, Toulouse, France.
2004 – 2010	Research Assistant, Meteorological and Hydrological Service, Croatia.

FUNDING EXPERIENCE

2024 Research Fond of UIBK (PI): From the TEAMx Observational Campaign (TOC) - TOwards Climate assessment. Grant Amount: 118 154 €

2024 FSP Alpine Space Infrastructure Fond (co-PI): Turbulence Packs for TEAMx. Grant Amount: 82 620 € (equal share with the PI)

2021- 2027 ERC Consolidator Grant (PI): Developing a novel framework for understanding and scaling near-surface turbulence in complex terrain (Unicorn). Grant amount: 1.96 mil €

2022-2025 ESPRIT Grant (FWF): Investigating submeso motions with DTS (co-PI). Grant Amount: 294 015.98 €

2021 Research Fond of UIBK (PI). Grant Amount: 40 000 €

2019 FSP Alpine Space Infrastructure Fond (PI): Nanobarometer network. Grant Amount: 61 656 €

2015-2019 FWF Hertha Firnberg (PI): Scale interactions in stable boundary layer over mountainous terrain (T781-N32). Grant Amount: 226 530 €

2014-2015 HydraLab IV TA (PI): Influence of secondary orography on boundary layer separation and rotors (Together with partners from Austria, Croatia, USA, Germany, Iceland, Australia). Grant Amount: 100 000 € (covering water-tank experiments and travel)

INTERNATIONAL SCIENTIFIC COLLABORATIONS

Collaborator in projects

2025- LIVAVERT(EX)^2 – Linking valley flow and vertical exchange in complex terrain (**Collaborator**, PI: P. Gasch, KIT)

2024- Generalizing MOST-based surface layer parameterizations for ESMs of different scales (**Collaborator,** PI: M.Calaf, University of Utah)

2023- The Microclimate of Glacierized Areas (**Collaborator**, PI: R. Mott, SLF)

2023- FlyHigh (**Collaborator**, PI: A. Groos, University of Erlangen)

2022 - Towards a reformulation of surface layer theory for boundary layers over mountainous terrain (**Co-PI**, PI: Miguel Texeira, University of Reading)

2016-2019 METCRAX II (**Collaborator,** PI: C.D. Whiteman, University of Utah)

2013-2018 Investigating spatial inhomogeneity of surface layer turbulence in complex terrain (**Collaborator**, PI: Prof. M. W. Rotach, University of Innsbruck)

2013-2018 Turb-i-Box (**Collaborator**, PI: Prof. M. W. Rotach, University of Innsbruck)

2011-2015 Innsbruck-Box (i-Box) (**Project coordinator**, PI: Prof. M. W. Rotach, University of Innsbruck)

2011-2014 HydraLab IV TA: Exploring the role of wave drag in the stable stratified oceanic and atmospheric boundary layer (**Collaborator**, PI: Dr. G.J. Steeneveld, Mr. M. Kleczek, University of Wageningen, together with partners from Netherlands, Austria, Croatia, Romania)

2006-2010 Terrain-induced Rotor Experiment (**PhD student**, PI: Prof. Vanda Grubišić, Desert Research Institute, Nevada, USA and University of Vienna, a multi-national project from Europe and USA)

2005-2006 ALARO-O (**Visiting Scientists**, Meteo-France, in collaboration with a number of European countries)

2004-2011 Storms and natural disasters in Croatia (**PhD student**, PI: Dr. Branka Ivančan-Picek, PhD Student)

HONORS, AWARDS AND SCHOLARSHIPS

2025	Faculty Teaching Award, University of Innsbruck, Faculty of Geo- and Atmospheric Sciences
2020	City of Innsbruck 2020 Prize for Scientific Research at the Leopold-Franzens-University (Preis der Landeshauptstadt Innsbruck für die wissenschaftliche Forschung 2020)
2020	Mountain Meteorology Outstanding Early Career Award awarded by American Meteorological Society
2012	Dr. Gerhart Schinze Prize (Austrian Prize in Dynamic Meteorology) award by the Austrian Meteorological Society for outstanding and innovative work in the field of analysis and simulation of synoptic and mesoscale processes in the atmosphere
2011	L'Oreal-UNESCO National Fellowship for Women in Science – awarded to outstanding women scientists in the early stages of their career to enable and/or facilitate promising scientific research
2010	Scholarship awarded by the Scholarship Council of the Scholarship Foundation of the Republic of Austria
2010	Student Travel Award for the participation at "International School on Topographic Internal Waves", Cargèse, France
2008	AMS Best Student Poster Presentation at 13th Conference on Mountain Meteorology, Whistler, Canada
2008	Student Travel Award for the participation on AMS/COMET/MSC Mountain Weather Workshop, Whistler, Canada
2006	AMS Best Student Poster Presentation at 12th Conference on Mountain Meteorology, Santa Fe, USA
2006	EMS Young Scientist Travel Award at 12th Conference on Mountain Meteorology, Santa Fe, USA
2002	Scholarship awarded by the City of Zagreb
2002	Scholarship awarded by the University of Zagreb
2001	Scholarship awarded by the University of Zagreb
2001	Dean's Award for the Best Student of the Academic Year, Department of Geophysics, Faculty of Science, University of Zagreb

TEACHING

Master courses (UIBK):

- Boundary Layer Meteorology (2019 – present) – 100%
- Dynamic-Synoptic Meteorology (2019 – 2022) – 100%
- Reading, Writing, Presenting Scientific Contents (2019 – 2021) – 100%
- Field Course in Alpine Meteorology (2012 – 2015, 2020 – 2021) – 25%
- Exercises in Geophysical Fluid Dynamics (2012 – 2015) – 100%
- Weather discussion (2013 – 2015) – 50%

Bachelor courses (UIBK):

- Boundary Layer Meteorology (2023 – present) – 100%
- Introduction to Atmospheric Sciences (2021 – present) – 50%
- Introduction to Scientific Computing and Gender Competences (2022 – present) – 10%
- Exercises in Theoretical Meteorology II: Dynamics (2012 – 2015, 2019 – 2022) – 100%
- Exercises in Theoretical Meteorology I: Thermodynamics (2011 – 2015) – 100%

Master/PhD courses (elsewhere):

- The Arctic Atmospheric Boundary Layer and Local Climate Processes (AGF-850), UNIS, Longyearbyen, Svalbard (2023) – 25%

Summer schools:

- NCAR Advance Study Program Summer Colloquium (2023): The Atmospheric boundary Layer: Integrating Complexity Across Disciplines, Boulder, USA
- CHESS Summer School (2022): Land-Atmosphere Interaction Processes and Convection, Elverum, Norway
- InnSAR Innsbruck Summer School of Alpine Research (2015): Surface-Atmosphere Exchange over Mountainous Terrain, Innsbruck, Austria

Other:

Sommertechnikum MINT (2017) summer school for female high school students in STEM, Innsbruck

ADVISOR (University of Innsbruck)

Postdoctoral students: Claudine Charrondiere, Karl Lapo, Damian Wóycik, Mauro Ghirardelli, Samuele Mosso

PhD students: Samuele Mosso (defended 2025), Andreas Rauchöcker, Maja Wedel, Leo Schlagbauer (co-advisor)

Master students: advisor: Roman Brogli, Martina Bramberger, Veronika Krieger, Alexander Kehl, Riccardo Alvarez Montavalo, Alexander Rudolf, Andreas Rauchöcker, Silvia Barbieri, Ilga Staudinger; co-advisor: Giovanni Massaro, Markus Emprechtinger, Alessio Gozio

Bachelor students: Stella Hell, Hannah Kranz, Monica Abram, Luis Eichholzer, Jakob Werkgarner, Viola Seifried, Sebastian Brandl

External member of PhD committee or PhD evaluation committee: Mario Schiavon (University of Bologna), Pleun Bonekamp (Utrecht University), Lena Pfister (University of Bayreuth), Claudine Charrondiere (University of Grenoble), Zev Underwood (University of Utah), Michael Haugeneder (EPFL), Nathan Agarwal (University of Colorado, Boulder), Benjamin Udina (University of Utah), Florian Gebhardt (Alfred Wegener Institut, Potsdam), Patricia Asemann (EPFL)

OBSERVATIONAL CAMPAIGNS

2025	TEAMx Observational Campaign (winter and summer EOP)
2023	MoHATS (Mountain Horizontal Turbulence Array)
2023	HEFEX II experiment (Multiscale interactions in the glacier atmosphere)
2019	SEECAP experiment (Understanding cold pool formation for artificial snow production)
2018	HEFEX experiment (Turbulent exchange on an alpine glacier)
2011 – 2015	Set-up and maintenance of i-Box turbulence measurement sites
2011 – 2015	Teaching the Field Course in Alpine Meteorology
2006	Terrain-induced Rotor Experiment

SERVICE TO UNIVERSITY and INTERNATIONAL SCIENTIFIC COMMUNITIES

Committee Member

- Speaker of the Research Center Climate: Cryosphere and Atmosphere, University of Innsbruck (2023 - present)
- ICAM Steering Committee (2023 - present)
- International Commission on Dynamic Meteorology, International Association of Meteorology and Atmospheric Sciences of IUGG (2023 - present)
- GEWEX GHP Panel (2019 - 2025)
- Committee on Mountain Meteorology (American Meteorological Society) (2018 - 2022)
- TEAMx Numerical Modelling Committee
- TEAMx Surface Exchange Working Group

- Doctoral Programme Dynamics of Complex Continua (UIBK)
- Doctoral school Climate on all times scales (UIBK)
- Doctoral school Computational interdisciplinary modelling (UIBK)
- Curriculum Committee (UIBK)
- Faculty Committee (UIBK: Deputy representative)

Organizational (co-convener, organization committee, chair)

1. International Conference on Alpine Meteorology, Poreč, 2025 (head of the scientific committee)
2. EGU General Assembly, 2025 (co-convener of the session "Cryosphere-Atmosphere Interactions in Mountain Environments")
3. GEWEX Open Science Conference, Sapporo, 2024 (co-convener of the session on Land-atmosphere interactions)
4. International Conference on Alpine Meteorology, Sankt Galen, 2023 (member of scientific committee)
5. Workshop on Atmospheric Turbulence: 100 Years of Turbulence, Innsbruck 1922 – 2022, Innsbruck, Austria (organizer)
6. EGU General Assembly, 2022 (convener of the session "Mountain Weather and Climate")
7. Meteorology and Climate – Modelling for Air Quality Conference, Davis, 2021 (technical program committee)
8. International Conference on Alpine Meteorology, Online, 2021 (member of scientific committee)
9. EGU General Assembly, 2014/2015/2016/2018/2019 (co-convener of the session "Atmospheric processes in complex terrain" and session chair)
10. InnSAR, Innsbruck Summer School of Alpine Research, Innsbruck, 2015
11. Davos Atmosphere and Cryosphere Assembly (DACA), Davos, 2013 (co-convener of the session "Dynamics of Mountain Weather and Climate")
12. International Conference on Alpine Meteorology, Aviemore 2011 (organization committee)
13. 15th Conference on Mountain Meteorology, Steamboat Springs, 2012 (session chair)
14. EGU General Assembly, 2011 (session chair)

Editorial

Member of the Editorial Board: *Boundary Layer Meteorology (2023 - present)*
Associate Editor: *Journal of Applied Meteorology and Climatology (2019 - 2023)*
Review Editor: *Frontiers in Atmospheric Science (2015, 2022)*

Peer-Reviewer for journals:

Agricultural and Forest Meteorology, Atmosphere, Applied Energy, Atmospheric Chemistry and Physics, Boundary Layer Meteorology, Bulletin of the American Meteorological Society, Engineering Applications of Computational Fluid Mechanics, Environmental Fluid Mechanics, Frontiers in Atmospheric Science, Geophysical Research Letters, Geophysical Model Development, Journal of Applied Meteorology and Climatology, Journal of the Atmospheric Sciences, Journal of Atmospheric and Solar-Terrestrial Physics, Journal of Climatology, Journal of Fluid Mechanics, Journal of Geophysical Research, Journal of Glaciology, Meteorology and Atmospheric Physics, Meteorologische Zeitschrift, Monthly Weather Review, Nature Climate Change, Physical Review Letters, Proceedings of the National Academy of Sciences, Pure and Applied Geophysics, Quarterly Journal of the Royal Meteorological Society, Remote Sensing of the Environment

Peer-Reviewer for proposals

NSF - National Science Foundation

ISF - Israel Science Foundation
DFG – German Research Foundation
HRZZ – Croatian Science Foundation
GACR – Czech Science Foundation

Memberships

Croatian Meteorological Society, Austrian Meteorological Society, American Meteorological Society, European Geosciences Union, American Physical Society

PARTICIPATION IN SUMMER SCHOOLS AND WORKSHOPS

07.-10.10. 2024	Mathematics of Weather, Bad Orb, Germany
18.-24.09. 2022	Multiscale Wave-Turbulence Dynamics in the Atmosphere and Ocean (Workshop 2238), Mathematisches Forschungsinstitut Oberwolfach, Germany
08.-12.10. 2019	Fiber Optic Sensing in Earth and Atmospheric Sciences (FOSES), Thurnau, Germany
27.-31.03. 2017	Workshop on Atmospheric Stable Boundary Layers, Delft, The Netherlands
03.-04.11. 2014	Workshop on advances in Meso- and Micrometeorology, Donja Stubica, Croatia
02.-11.11. 2010	International school on topographic internal waves in the atmosphere and ocean, Cargèse, Francuska
25.2. 2010	'ABL - Current Problems & Advancements', Mini-Workshop on ABL, Zagreb Croatia
07.-10. 9. 2009	ECMWF Annual Seminar, Reading, UK
30.-31.10. 2008	High performance computing on Grid for meteo applications, workshop, Zagreb, Croatia
05.-08. 8. 2008	AMS/COMET/MSC Mountain Weather Workshop: Bridging the Gap between Research and Forecasting, Whistler, Canada
17.-19. 4. 2007	T-REX Data Workshop, Boulder, CO, USA
18.-22. 7. 2005	Advanced Course on Atmospheric Convection, Udine, Italy
04.-10. 6. 2005	Aladin workshop, Bratislava, Slovakia

TECHNICAL SKILLS

- Expert in eddy covariance and turbulence measurements (i-Box, HEFEX, SEECAP, HEFEX II, TEAMx projects; field courses at Ms level)
- Data organisation and analysis, statistics and time series analysis
- Data visualization
- Analytical modelling
- Programming in MATLAB, R

LANGUAGES

- Croatian: mother tongue
- English: proficient
- German: fluent
- Italian: basic
- Spanish: basic

PEER REVIEWED PUBLICATIONS

REASERCH AND OVERVIEW ARTICLES

In Review

1. Waterman, T., **Stiperski, I.**, Torres-Rojas, L, Calaf, M., 2025: Impact of Heterogeneity, Turbulence Anisotropy, and Non-stationarity on Scalar Flux Variance Relations Across Diverse Ecosystem. *Agricultural and Forest Meteorology,* https://doi.org/10.48550/arXiv.2509.18385
2. Lord-May, C., Radić, V., **Stiperski, I.,** 2025: Inferring katabatic jet height from cospectral analysis of turbulence*, Boundary-Layer Meteorology*
3. Mott, R., Haugeneder, M., Reynolds, D., **Stiperski, I.,** Patricia Asemann, Dylan Reyolds, Nicholson, L., 2025: Characterization of the near-surface air temperature dynamics over glaciers using thermal infrared measurements, *Frontiers in Earth Science - Cryospheric Sciences*
4. Xiao, C., Senoack, I., Shapiro, A., **Stiperski, I.**, 2025: Comment on ``Instabilities of rotating inclined buoyancy layers'', *Physical Review E*
5. Waterman, T.S., **Stiperski, I.,** Chaney, N., Calaf, M., 2025: Evaluating Anisotropy-based Monin-Obukhov Similarity Theory over Canopies and Complex Terrain. *Quarterly Journal of the Royal Meteorological Society,* https://doi.org/10.48550/arXiv.2502.13970
6. Sauter, T., Brock, B. W., Collier, E., Goger, B., Groos, A. R., Haualand, K.F., Mott, R., Nicholson, L., Prinz, R., Shaw, T. E., **Stiperski, I.,** Georgi, A., Haugeneder, M., Mandal, A., Reynolds, D., Saigger, M., Sicart, J. E., Voordendag, A., 2025: Glacier-Atmosphere Interactions and Predictability in High-Mountain Regions, *Review of Geophysics*, https://doi.org/10.22541/essoar.174164160.03475851/v1

Published

1. Mosso, S., Lapo, K., **Stiperski, I.**, 2025: Revealing the drivers of turbulence anisotropy over complex terrain: an interpretable machine learning approach, *Boundary-Layer Meteorology*. **191**, 51, https://doi.org/10.1007/s10546-025-00946-5
2. **Stiperski, I**. Rotach, M. W., Ansorge, C., Baklanov, A., Belušić, D., Bou-Zeid, E., Brun, C., Christen, A., Dias, N. L., Dörnbrack, A., Foken, T., Grachev, A., Holtslag, A. A. M., Kelly, M., Klein, P., Kosović, B., Meneveau, C., Mortarini, L., Patton, E. G., Steeneveld, G. J., Thomas, C., Trini Castelli, S., Zardi, D., 2025: Open questions in atmospheric turbulence: A synthesis from the Centenary Workshop ``100 Years of Turbulence: Innsbruck 1922 - 2022". *Journal of the European Meteorological Societ,* 3, 100022, https://doi.org/10.1016/j.jemets.2025.100022
3. Nicholson, L., **Stiperski, I.,** Nitti, G., Prinz, R., Georgi, A., Groos, A.R., Shaw, T.E., Sauter, T., Haugeneder, M., Mott, R., Sicart, J.E, Brock, B.W., Albers, R., Allegri, B., Barral, H., Biron, R., Charrondiere, C., Coulaud, C., Fischer, A., Reynolds, D., Richter, N., Schroeder, M., Vettori, P., Voordendag, A., Wydra, C., 2025: The second HinterEisFerner EXperiment (HEFEX II): Initial insights into boundary layer structure and surface-atmosphere exchange processes from intensive observations at a valley glacier. *Bulletin of the American Meteorological Society*, 106, E2143–E2169, https://doi.org/10.1175/BAMS-D-24-0010.1

4. Lapo, K., Pfister, L., Mosso, S., Lehner, M., **Stiperski, I.,** 2025: The vertical temperature structure and scaling relations for heat of the near surface stable boundary layer. *Boundary-Layer Meteorology*, 191, 31, https://doi.org/10.1007/s10546-025-00920-1

5. George, J., Teixeira, M., **Stiperski, I.**, 2025: A physically based modification of the KPP turbulence closure scheme for the upper ocean that accounts for the effects of Langmuir turbulence, *Journal of Oceanography,* 55, 1067–1081, https://doi.org/10.1175/JPO-D-24-0175.1

6. Gucci, F., Mosso, S., Vercauteren, N., **Stiperski, I.,** 2025: Interpreting turbulence anisotropy in a streamline coordinate system. *Journal of Geophysical Research: Atmospheres*, 130, e2024JD042212, https://doi.org/10.1029/2024JD042212

7. Goger, B., **Stiperski, I**., Ouy, M., Nicholson, L., 2025: Investigating the influence of changing ice surfaces on gravity wave formation impacting glacier boundary layer flow with large-eddy simulations. *Weather and Climate Dynamics*, 6 (2), 345 – 367, https://doi.org/10.5194/wcd-6-345-2025

8. Charrondiere, C., **Stiperski, I.,** 2024: Spectral scaling of unstably-stratified atmospheric flows: turbulence anisotropy and the low frequency spread. *Quarterly Journal of the Royal Meteorological Society*, 150(764), 4196-4216, https://doi.org/10.1002/qj.4811

9. Mosso, S., Calaf, M., **Stiperski, I.,** 2024: Flux gradient relations in complex terrain and their dependence on turbulence anisotropy. *Quarterly Journal of the Royal Meteorological Society,* 150(763), 3346–3367, https://doi.org/10.1002/qj.4762

10. Urbancic, G., **Stiperski, I.,** Holtslag, A.A.M., Vihma, T., 2024: A novel similarity approach for describing the bulk shear in the atmospheric surface layer. *Boundary-Layer Meteorology*, 190, 10, https://doi.org/10.1007/s10546-023-00854-6

11. Haugeneder, M., Lehning, M., **Stipeski, I.,** Reynolds, D., Mott, R., 2024: Turbulence in the strongly heterogeneous near-surface boundary layer over patchy snow. *Boundary-Layer Meteorology*, 190, 7, https://doi.org/10.1007/s10546-023-00856-4

12. Rauchöcker, A., Rudolph, A. **Stiperski, I.,** Lehner, M., 2024: Cooling processes of a cold-air pool in Seefeld, Austria. *Quarterly Journal of the Royal Meteorological Society*, 150(760), 1243–1266, https://doi.org/10.1002/qj.4644

13. **Stiperski, I.,** Calaf, M., 2023: Generalizing Monin-Obukhov similarity theory (1954) for complex atmospheric turbulence. *Physical Review Letters*, 130 (12), 124001, https://doi.org/10.1103/PhysRevLett.130.124001 (***Editor's Selection***)

14. Gucci, F., Giovannini, L., **Stiperski, I.,** Zardi, D., Vercauteren, N., 2023: Sources of anisotropy in the Reynolds stress tensor in the stable boundary layer. *Quarterly Journal of the Royal Meteorological Society*, 149 (750), 277 – 299, https://doi.org/10.1002/qj.4407

15. Goger, B., **Stiperski, I.,** Nicholson, L., Sauter, T., 2022: The impact of large-scale flow direction on glacier boundary layer structure: Two Large-eddy Simulation Case Studies. *Quarterly Journal of the Royal Meteorological Society*, 148(744), 1319 – 1343, https://doi.org/10.1002/qj.4263

16. Chambers, J.R., Smith, M.W., Smith, T., Sailer, R., Quincey, D.J., Carrivick, J.L., Nicholson, L., Mertes, J., **Stiperski, I**., James, M.R., 2021: Correcting for systematic underestimation of topographic glacier aerodynamic roughness values from Hintereisferner, Austria. *Frontiers in Earth Science*, 9, 691195, https://doi.org/10.3389/feart.2021.691195.

17. **Stiperski, I**., Chamecki, M., Calaf, M., 2021: Anisotropy of unstably stratified near-surface turbulence. *Boundary-Layer Meteorology*, 180, 363 – 384, https://doi.org/10.1007/s10546-021-00634-0

18. **Stiperski, I.,** Katul, G.G., Calaf, M., 2021: Universal return to isotropy of inhomogeneous atmospheric boundary layer turbulence. *Physical Review Letters*, 126 (19), 194501, https://doi.org/10.1103/PhysRevLett.126.194501

19. Babić, N., **Stiperski, I.,** Marinović, I., Večenaj, Ž., De Wekker, S. F. J., 2021: Examining relationships between entrainment-driven scalar dissimilarity and surface energy balance underclosure in a semiarid valley during daytime. *Agricultural and Forest Meteorology*, 298–299, 108272, https://doi.org/10.1016/j.agrformet.2020.108272

20. Mott, R., **Stiperski, I.,** Nicholson, L., Mertes, J., 2020: Insights into the effect of spatial and temporal flow variations on turbulent heat exchange at a mountain glacier. *The Cryosphere*, 14, 4699–4718, https://doi.org/10.5194/tc-14-4699-2020

21. Smith, T., Smith, M.W., Chambers, J.R., Nicholson, L., Mertes, J., Quincey, D.J., Carrivick, J.L., Sailer, R., **Stiperski, I.,** 2020: A scale-dependent model for changing aerodynamic roughness of ablating glacier ice. *Journal of Glaciology*, 66(260), 950-964. https://doi.org/10.1017/jog.2020.56

22. Nicholson, L., **Stiperski, I.,** 2020: Comparison of turbulent structures and energy fluxes over exposed and debris-covered glacier ice. *Journal of Glaciology*, 66, 543 – 555, https://doi.org/10.1017/jog.2020.23

23. Cuxart, J., Martinez-Villagrassa, D., **Stiperski, I.,** 2020**:** Validation of a simple diagnostic relationship for downslope flow. *Atmospheric Letters*, 21: e965, https://doi.org/10.1002/asl.965

24. **Stiperski, I.,** Holtslag, A.A.M., Lehner, M., Hoch, S., Whiteman, C.D., 2020: On the turbulence structure of deep katabatic flows on a shallow mesoscale slope. *Quarterly Journal of the Royal Meteorological* Society, 146: 1206– 1231. https://doi.org/10.1002/qj.3734

25. Goger, B., Rotach, M.W., Gohm, A., **Stiperski, I.,** 2019: A new horizontal length scale for a three-dimensional turbulence parametrization in meso-scale atmospheric modelling over highly complex terrain. *Journal of Applied Meteorology and Climatology,* 58/9, 2087 – 2102, https://doi.org/10.1175/JAMC-D-18-0328.1

26. Vercauteren, N., Boyko, V., Faranda, D., **Stiperski, I**., 2019: Scale interactions and anisotropy in stable boundary layers. *Quarterly Journal of the Royal Meteorological Society*, 145/722, 1799 – 1813*,* https://doi.org/10.1002/qj.3524

27. **Stiperski**, **I.,** M. Calaf, Rotach, M.W., 2019: Scaling, Anisotropy, and Complexity in Near-Surface Atmospheric Turbulence, *Journal of Geophysical Research: Atmospheres,* 124/3, 1428 – 1448, https://doi.org/10.1029/2018JD029383 (***Top Downloaded paper***)

28. **Stiperski**, **I.,** M. Calaf, 2018: Dependence of near-surface similarity scaling on the anisotropy of atmospheric turbulence, *Quarterly Journal of the Royal Meteorological Society*, 144, 641 – 657, https://doi.org/10.1002/qj.3224

29. Mayr, G., Plavcan, D., Armi, L., Elvidge, A., Grisogono, B., Horvath, K., Jackson, P., Neurer, A., Seibert, P., Steenburgh, J.W.**, Stiperski, I.,** Sturman, A., Večenaj, Ž., Vergeiner, J., Vosper, S., Zängl, G. 2018: The community foehn classification experiment, *Bulletin of American Meteorological Society*, 99, 2229 – 2235, https://doi.org/10.1175/BAMS-D-17-0200.1

30. Sfyri, E., Rotach, M.W., **Stiperski**, **I.,** Bosveld, F.C., Lehner, M., Obleitner, F., 2018: Scalar flux similarity in the near-surface layer over mountainous terrain. *Boundary-Layer Meteorology*, 169, 11-46, https://doi.org/10.1007/s10546-018-0365-3

31. Serafin, S., B. Adler, J. Cuxart, De Wekker, S.F.J., Gohm, A., Grisogono, B., Kalthoff, N., Kirschbaum, D.J., Rotach, M.W., Schmidli, J., **Stiperski**, **I.,** Večenaj, Ž., Zardi, D. 2018: Exchange processes in the atmospheric boundary layer over mountains. *Atmosphere*, 9/3, 102, https://doi.org/10.3390/atmos9030102

32. Goger, B., Rotach, M.W., Gohm, A., Fuhrer, O., **Stiperski**, **I.,** Holtslag, A.A.M., 2018: The impact of 3D effects on the simulation of turbulence kinetic energy structure in a major alpine valley, *Boundary-Layer Meteorology*, 168, 1 – 27, https://doi.org/10.1007/s10546-018-0341-y

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38. Massaro, G., **Stiperski**, **I.,** Pospichal, B., Rotach, M.W., 2015: Accuracy of retrieving temperature and humidity profiles by ground-based microwave radiometry in truly complex terrain, *Atmospheric Measurement Techniques*, 8, 3355 – 3367, https://doi.org/10.5194/amt-8-3355-2015

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BOOKS

Editorial

1. Teixeira, M.A., D.J. Kirshbaum, H. Ólafsson, P.F. Sheridan, **Stiperski, I.,** 2016: Editorial: The Atmosphere over Mountainous Regions, *Frontiers in Earth Science*, 4, 84, https://doi.org/10.3389/feart.2016.00084
2. Arthur, R.S., Brown, M., Mauder, M., Oldroyd, H.J., Stiperski, I., Wharton, S. 2024: Editorial: Resolving Atmospheric Flow in Complex Environments -Recent Experiments in Terrain and Forest Canopies, *Frontiers in Earth Science*, 12, https://doi.org/10.3389/feart.2024.1439996

Chapter

3. **Stiperski, I**., Calaf, M., 2022: Monin-Obukhov Similarity Theory and its Generalization for Complex Atmospheric Turbulence. *Oberwolfach Reports*, 42: 26 – 27, https://doi.org/10.14760/OWR-2022-42 (https://publications.mfo.de/handle/mfo/3988)
4. **Stiperski, I.,** 2009: *Himalajska meteorologija* (Himalayan meteorology). *Više od Everesta (More than Everest)*, Željko Žarak (editor). Zagreb: Libricon do.o.o, pp. 193-196. Popular Science

Other:

1. Schumacher, B., Katurji, M., Zhang, J., **Stiperski, I**., Dunker, C., 2019: Evolution of micrometeorological observations: Instantaneous spatial and temporal surface wind velocity from thermal image processing. *GeoComputation* 2019*,* https://doi.org/10.17608/K6.AUCKLAND.9869942.V1
2. Goger, B., Rotach, M.W., Gohm, A., **Stiperski, I.,** O. Fuhrer, O., 2016: Current challenges for numerical weather prediction in complex terrain: Topography representation and parameterizations. 2016 *International Conference on High Performance Computing & Simulation (HPCS)*, Innsbruck, Austria, IEEE
3. **Stiperski, I.,** 2005: The causes of supercell development with tornadogenesis on 30th August 2003 - A case study. *Geofizika*, 22, 83 – 104

INVITED AND KEYNOTE CONFERENCE AND SEMINAR TALKS

1. **Stiperski, I.,** 2025: Near-surface Turbulence over Mountainous Terrain, *37th International Conference on Alpine Meteorology*, Poreč, Croatia, 02.10.2025 - Invited Conference Talk
2. **Stiperski, I.,** 2025: Turbulence Structure and Surface Energy Balance over Mountainous Terrain, *Chapman Conference on Energy Balance Closure Problem: Causes, Corrections, and Implications*, Boulder, CO, 16.09.2025 - Invited Conference Talk
3. **Stiperski, I.,** 2024: Challenges of turbulence modelling over complex terrain, *Mathematics of Weather*, Bad Orb, DE, 07.10.2024 – Invited Conference Talk
4. **Stiperski, I.,** 2023: Surface-layer turbulence over mountains - hurdles and ways forward. *ETH Zürich seminar*, Zürich, CH, 27.11.2023.

5. **Stiperski, I.**, 2023: Understanding surface-layer turbulence over mountains, *IMK, KIT seminar,* Karlsruhe, DE 21.11.2023
6. **Stiperski, I.**, Calaf, M., Charrondiere, C., Mosso, S., 2023: Beyond Monin-Obukhov Similarity Theory and the Implications for Turbulence over Complex Terrain, *EMS Annual Meeting 2023*, Bratislava, SK. 05.09.2023 – Invited Conference Talk
7. **Stiperski, I.,** 2023: Turbulent Flow over Complex Topography. *New Horizons in Environmental Mechanics: A Festschrift in Honour of John Finnigan*, NCAR, Boulder, Colorado, 26.07.2023 – Invited Conference Talk
8. **Stiperski, I.,** 2023: Katabatic flows and their anisotropic structure. *Euromech Colloquium 608, Dynamics of gravity currents*. *Grenoble,* France*,* 29.06.2023 – Keynote Conference talk
9. **Stiperski, I.,** 2023: Anisotropy of turbulence eddies and the implications on surface-layer turbulence parametrizations. *University of Reading*, UK, 13.04.2023
10. **Stiperski, I.,** 2023: Anisotropy of turbulence eddies and the implications on surface-layer turbulence parametrizations. *Princeton University*, US, 24.02.2023
11. **Stiperski, I.,** 2023: Anisotropy of turbulence eddies and the implications on surface-layer turbulence parametrizations. *Duke University*, US, 15.02.2023
12. **Stiperski, I.,** 2022: How can we improve Monin-Obukhov similarity theory? *Goethe University Frankfurt*, DE, 02.06.2022
13. **Stiperski, I.,** 2021: Understanding turbulence in mountainous terrain. *University of Reading*, UK, 22.11.2021
14. **Stiperski, I.,** 2021: Is it possible to make similarity theory work over complex terrain? *LEGI, University of Grenoble*, FR, 14.10.2021
15. **Stiperski, I.,** 2021: Extending similarity theory into complex terrain. *University of Vienna*, AT, 04.05.2021
16. **Stiperski, I.,** 2021: Extending similarity theory into complex terrain. *University of Trento*, IT, 08.04.2021
17. **Stiperski, I.,** 2020: Why we should always include anisotropy in our turbulence studies. *TU Delft,* NL, 19.11.2020
18. **Stiperski, I.,** 2019: The Tales of Turbulence. *Ingeborg Hochmair Professorship inaugural lecture.* University of Innsbruck, 26.3.2019.
19. **Stiperski, I.,** 2018: Why the shape of turbulence matters. *Interdisciplinary Climate seminar at University of Innsbruck*, 22.11.2018.
20. **Stiperski, I.,** Calaf, M., 2018: Relationship between near-surface similarity and turbulence anisotropy. *23rd Symposium on Boundary Layer and Turbulence*, Oklahoma City, OK, 15.06.2018 – Invited Conference Talk
21. **Stiperski, I.,** 2018**:** Towards a unified approach for atmospheric turbulence. *University at Albany - State University of New York*, Albany, NY, 18.06.2018.
22. **Stiperski, I.,** Calaf, M., 2017: What can anisotropy tell us about turbulence similarity in terrain of increasing complexity? *American Geophysical Union (AGU) Fall Meeting 2017*, New Orleans, LA, 14.12.2017 – Invited Conference Talk
23. **Stiperski, I.,** 2017: Can the information on turbulence anisotropy improve near-surface similarity scaling over complex terrain? *University of Utah*, Salt Lake City, UT, 18.10.2017

24. **Stiperski, I**., 2017: What is brewing outside the Meteor Crater? Turbulence characteristics of deep katabatic flows on a shallow slope. *University of Wageningen,* Wageningen, The Netherlands, 03.04.2017
25. **Stiperski, I**., 2016: Turbulence in Mountain Flows: A picture from METCRAX II. *Freie Universität Berlin*, Berlin, Germany, 30.11.2016.
26. **Stiperski, I**., 2016: Turbulence characteristics of downslope flows in mountainous Terrain (EOL Seminar). *National Center for Atmospheric Research (NCAR),* Boulder, CO, 16.08.2016
27. **Stiperski, I.,** 2015: Why Mountains Matter in Meteorology. *The University Centre in Svalbard,* Longyearbyen, Norway, 25.09.2015.
28. **Stiperski, I**. 2015: Examining multiplicity of scales in mountainous terrain. *Challenges in Meteorology 4:* Climate change - Responsibilities of the current generation. Zagreb, Croatia, 25.11.2015.
29. Rotach, M. W., Baur, F., Markl, Y., **Stiperski, I.,** Mallaun, C., 2015: On the turbulence structure over complex mountainous terrain as observed in the i-Box. *American Geophysical Union (AGU) Fall Meeting 2015*, San Francisco, CA, 16.12.2015.
30. Rotach, M. W., **Stiperski, I.**, 2014: On the Boundary Layer Structure over Mountainous Complex Terrain. *Workshop on Advances in Meso- and Micrometeorology*, Donja Stubica, Croatia, 03.11.2014.
31. **Stiperski, I.**, Rotach, M., 2013: Innsbruck Box - a test bed for studying turbulence in complex terrain. *University of Leipzig,* Leipzig, Germany. 13.06.2013
32. **Stiperski, I.**, 2012: Mountain waves and rotors in a double mountain system. *Meteo-France,* Toulouse. 18.10.2012
33. **Stiperski, I.,** Rotach, M.W., 2012: Innsbruck-Box: boundary-layer measurements in very complex Terrain. *University Joseph Fourier in Grenoble*, France. 29.02.2012
34. **Stiperski, I.,** 2010: Trapped lee wave interference over double obstacles. *University of Vienna*, Vienna, Austria. 04.05.2010
35. **Stiperski, I.,** 2009: Trapped lee wave interference over double bell-shaped mountains. *University of Leeds*, Leeds, UK. 01.09.2009

OTHER EXPERIENCE AND POPULAR SCIENCE

Weather forecasting for mountaineering expeditions: I. Croatian Female Expedition to Cho Oyu (2007) (with Z. Vakula); Croatian Female Expedition to Everest (2009); PDS Velebit Expedition to Pik Lenina (2009); Finish Expedition to Everest & Lhotse (2010); PDS Velebit Expedition to Mt Elbrus (2010); French Pasu Sar Expedition (2013) (with M. Presser)

Popular lectures on Mountain Meteorology for Mountaineering Schools of Velebit, Željezničar and Matica mountaineering societies, Zagreb, Croatia held annually (2007-2011)

In the media

Contributor to the Instagram account promoting interdisciplinary research in climate sciences: https://www.instagram.com/Uibk.climate/
"Dobro je znati", On: Croatian Television (HRT), 2012
"Dobro jutro Hrvatska: Jeste li znali da postoje strucnjaci za planinsku meteorologiju", On: Croatian Television (HRT), 2015
"Zasto imamo najbolju klimu", Slobodna Dalmacija, 2016
"Überblick über das Chaos", top.Tirol, 01.04.2019
"Über Cluster und Turbulenzen", Die Landeshauptstadt Innsbruck informiert, 2020.

“Exzellente Wissenschafter der Universität Innsbruck ausgezeichnet”, Tiroler Tageszeitung, 2020
“18 in Österreich tätige Forscher erhalten Millionen-Förderung vom ERC”, Tiroler Sparkasse, 2020
“ERC-Grants für Meteorologin und Chemiker der Uni Innsbruck”, Austria Presse Agentur (APA) 2020
“Millionenpreise für Innsbrucker Forscher”, ORF Tirol Online, 2020
“Himmlische Turbulenzen und herrliche Horizonte”, netzwerk tirol. Das regionale Wirtschaftsmagazin, 10.12.2020
“Turbulentes Wetter im Gebirge”, Die Presse, 30.01.2021.
“Eine Theorie der Turbulenz”, Der Standard, 03.02.2021.