

Marina Dütsch

Curriculum Vitae

Department of Meteorology and Geophysics
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Personal information

Place of birth	Winterthur, Switzerland
Date of birth	3 October 1989
Nationality	Swiss
OrcID	0000-0002-1128-4198

Education

09/2013 – 11/2016	PhD in Atmospheric Sciences Institute for Atmospheric and Climate Science, ETH Zurich Zurich, Switzerland Date of the PhD defense: 14 November 2016 Doctoral thesis: Stable water isotope fractionation processes in weather systems and their influence on isotopic variability on different time scales Supervisors: Prof. Heini Wernli, Prof. Stephan Pfahl and Prof. Harald Sodemann
09/2010 – 03/2013	Master studies in Environmental Sciences ETH Zurich Zurich, Switzerland Master thesis: Stable water isotope fractionation along trajectories Supervisors: Prof. Stephan Pfahl and Prof. Harald Sodemann
02/2012 – 03/2012	Block course University of Svalbard Longyearbyen, Norway
09/2007 – 12/2010	Bachelor studies in Environmental Sciences ETH Zurich Zurich, Switzerland Bachelor thesis: Die Herkunft des Wassers beim Starkniederschlagsereignis in Mitteleuropa im Mai 2010 Supervisors: Dr. Andreas Winschall and Prof. Heini Wernli
08/2001 – 08/2007	Kantonsschule Rychenberg Winterthur, Switzerland

Work experience

09/2020 – present	Senior Scientist Institute for Meteorology and Geophysics, University of Vienna Vienna, Austria Advisor: Prof. Andreas Stohl
03/2018 – 09/2020	Postdoc Department of Earth and Space Sciences, University of Washington Seattle, WA, United States Advisors: Prof. Eric J. Steig and Dr. Peter N. Blossey
10/2017 – 12/2017	Voluntary work Youth Network No Excuse Slovenia Ljubljana, Slovenia
12/2016 – 09/2017	Postdoc Institute for Atmospheric and Climate Science, ETH Zurich Zurich, Switzerland Advisors: Prof. Stephan Pfahl and Prof. Heini Wernli
01/2012 – 08/2012	Internship Norwegian Meteorological Institute Bergen, Norway Supervisor: Dr. Lars Robert Hole

Teaching and teaching assistance

Autumn 2020, 2021	Lecturer for Informatik in der Meteorologie, University of Vienna
Spring 2021	Lecturer for Numerical Modelling in Fortran, University of Vienna
Autumn 2013, 2014, 2015	Teaching Assistant for Umwelt-Fluiddynamik, ETH Zurich
Spring 2014, 2015	Teaching Assistant for Numerical modeling of weather and climate, ETH Zurich
Spring 2015	Teaching Assistant for Weather discussion, ETH Zurich
Autumn 2014	Teaching Assistant for Numerische Methoden in der Umweltphysik, ETH Zurich
Spring 2014	Teaching Assistant for Mathematik V, ETH Zurich

Awards and fellowships

12/2019	College of the Environment Meeting & Travel Award
03/2018 – 02/2020	Swiss National Science Foundation Early Postdoc.Mobility fellowship P2EZP2_178439

Languages

German	Native
English	Fluent, C1
Slovenian	Good, B2
Norwegian	Intermediate, B1
French	Intermediate, B1
Spanish	Basic, A2
Latin	Latinum

IT skills

Operating systems	Linux, MacOS, Windows
Programming languages	Fortran, Python, Bash, Matlab, JavaScript, HTML
Text processing	Microsoft Word, LaTeX
Presentation	Microsoft Powerpoint, LaTeX
Visualization	Inkscape, Adobe Photoshop, Microsoft Powerpoint, Gimp

Publications

Gasparini, B., Rasch, P. J., Hartmann, D. L., Wall, C. J., and **Dütsch, M.** (2021). A Lagrangian perspective on tropical anvil cloud lifecycle in present and future climate *J. Geophys. Res. Atmos.*, 126, e2020JD033487, doi:10.1029/2020JD033487

Dütsch, M., Blossey, P. N., Steig, E. J., and Nusbaumer, J. M. (2019). Nonequilibrium fractionation during ice cloud formation in iCAM5: evaluating the common parameterization of supersaturation as a linear function of temperature. *J. Adv. Model. Earth. Sy.*, 11, 3777–3793, doi:10.1029/2019MS001764.

Dütsch, M., Pfahl, S., Meyer, M., and Wernli, H. (2018). Lagrangian process attribution of isotopic variations in near-surface water vapour in a 30-year regional climate simulation over Europe. *Atmos. Chem. Phys.*, 18, 1653–1669, doi:10.5194/acp-18-1653-2018.

Dütsch, M., Pfahl, S., and Sodemann, H. (2017). The impact of nonequilibrium and equilibrium fractionation on two different deuterium excess definitions. *J. Geophys. Res. Atmos.*, 122, 12732–12746, doi:10.1002/2017JD027085.

Roberts, T. J., **Dütsch, M.**, Hole, L. R., and Voss, P. B. (2016). Controlled meteorological (CMET) free balloon profiling of the Arctic atmospheric boundary layer around Spitsbergen compared to ERA-Interim and Arctic System Reanalyses. *Atmos. Chem. Phys.*, 16, 12383–12396, doi:10.5194/acp-16-12383-2016.

Dütsch, M., Pfahl, S., and Wernli, H. (2016). Drivers of $\delta^2\text{H}$ variations in an idealized extratropical cyclone. *Geophys. Res. Lett.*, 43, 5401–5408, doi:10.1002/2016GL068600.

Conference presentations

- 05/2021 Hercules Dome Workshop, online everywhere
Talk: Response of stable water isotopes to a collapse of the West Antarctic Ice Sheet in high-resolution simulations with the Weather Research and Forecasting Model
- 12/2020 AGU Fall Meeting, online everywhere
Poster: Responses of stable water isotopes to a collapse of the West Antarctic Ice Sheet in high-resolution simulations with the Weather Research and Forecasting Model
- 12/2019 AGU Fall Meeting, San Francisco, CA, United States
Talk: Quantifying different climatic controls on d -excess and ^{17}O -excess in Antarctic ice cores with the isotope-enabled Community Atmosphere Model (iCAM)
- 10/2019 CLIVAR Water Isotopes and Climate Workshop, Boulder, CO, United States
Talk: Quantifying different climatic controls on d -excess and ^{17}O -excess in Antarctic ice cores with the isotope-enabled Community Atmosphere Model (iCAM)
- 04/2019 EGU General Assembly, Vienna, Austria
Talk: Using stable water isotopes to constrain ice cloud microphysics over Antarctica in CAM5
- 12/2018 AGU Fall Meeting, Washington, DC, United States
Talk: Is the common parameterization of supersaturation with respect to ice as a linear function of temperature valid?
- 09/2018 South Pole Ice Core Science Meeting, Seattle, WA, United States
Talk: Parameterization of supersaturation with respect to ice as a linear function of temperature: implications for the interpretation of the South Pole ice core deuterium excess record.
- 01/2017 COSMO User Workshop, Zurich, Switzerland
Talk: The influence of meteorological processes on isotopic variability in a 10-year high resolution of stable water isotopes over Europe.
- 12/2016 AGU Fall Meeting, San Francisco, CA, United States
Talk: The influence of meteorological processes on isotopic variability in a 10-year high resolution of stable water isotopes over Europe.
- 04/2016 EGU General Assembly, Vienna, Austria
Talk: Variations of $\delta^2\text{H}$ in an idealized extratropical cyclone
Poster: Deuterium excess in the Rayleigh model
- 06/2015 IUGG General Assembly, Prague, Czech Republic
Talk: Stable water isotopes in an idealized extratropical cyclone
- 12/2014 COSMO User Workshop, Zurich, Switzerland
Talk: Stable water isotopes in idealized cyclones
- 04/2014 EGU General Assembly, Vienna, Austria
Poster: Modelling of stable water isotopes during frontal passages with COSMOiso
- 03/2014 COSMO User Seminar, Offenbach, Germany
Poster: Climatological simulation of stable water isotopes with COSMOiso