

Curriculum Vitae
Mathias Walter Rotach

Address

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Personal

Date of Birth March 31, 1960
Place of Birth Zürich
Citizenship Swiss (Herisau, AR)
Marital status married with Viola Rohner Rotach
 children Ricarda (*7/94) and Rosanna (*5/96)
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Degrees

- 2001 Habilitation in *Boundary Layer Meteorology* at the Swiss Federal Institute of Technology (Faculty of Environmental Natural Sciences), 'Air pollution Modeling in Urban areas' (collection of papers on the subject).
- 1991 Ph.D., Doctor of Natural Sciences, ETH Zurich. Thesis: 'Turbulence within and Above an Urban Canopy'. Ref.: Prof. Dr. A. Ohmura, Co-Ref's: Prof. Dr. H.C. Davies (ETHZ), Prof. Dr. T.R. Oke (UBC, Vancouver).
- 1985 Diploma of Natural Sciences ETHZ (Atmospheric Physics), thesis: 'Smog and Ozone – The Smog Chamber', Ref.: Prof. H. Dütsch.

Professional Appointments

- 2011 Head of Institute for Meteorology and Geophysics. As of May 6, 2015 the name of the institute has changed to become ***Institute of Atmospheric and Cryospheric Sciences***.
- 2010 University of Innsbruck, full Professor for Dynamic Meteorology.
- 2008 Swiss Federal Office for Meteorology and Climatology, Head Bio and Environmental Meteorology
- 2003 Swiss Federal Office for Meteorology and Climatology: Head Research and Development
- 2002-03 Visiting Scientist at NCAR (National Centre for Atmospheric Research), Mesoscale and Microscale Meteorology (MMM), Boulder CO (August to August).
- 2001 Visiting Professor, Ecole Centrale de Nantes, F, (June)/July.
- 2001-03 Institute for Atmospheric and Climate Science ETHZ (new institute – merger from former 'Climate Research' and 'Atmospheric Science' institutes), Head of Boundary Layer Group, various research projects, supervision of Ph.D. students and teaching activities
- 2000 Visiting Scientist at Pacific Northwest National Laboratories, Richland WA, July to August.
- 1999-01 Institute for Climate Research ETHZ (new institute name), Head of Boundary Layer Group, various research projects, supervision of Ph.D. students and teaching activities

- 1996-99 Head of Boundary-Layer Group, various research projects, supervision of Ph.D. students and teaching activities
- 1994-95 Research Associate, ETHZ, Research project: Regional Climate Modeling in the framework of NFP 31/CLEAR. Nesting of a mesoscale model (RegCM2) into global fields. Analysis of 'double CO₂-scenarios'.
- 1993 Postdoctoral position at ETHZ: 'Lagrangian modeling of air pollutants in urban areas' (ETH Project).
- 1992 Postdoctoral position at Risø National Laboratory, Denmark, Department of Meteorology and Wind Energy. Project: 'Modellierung des Schadstoff-Transports in einer städtischen Umgebung', SNF fellowship.
- 1990/91 Participant of the ETH Greenland Expedition (5 months in total, of which 1 month as station manager).
- 1985 Research assistant and Ph.D. student with Prof. Ohmura. Topic: 'Turbulence structure over an urban surface' (within the framework of the 'Zürich Urban Climate Program').

Research related Professional Activities

- Member, Editorial Board, Bulletin of Atmospheric Science and Technology, 2024 -
- Member, International Advisory Board (IAB), Journal of the European Meteorological Society (JEMS), 2024 -
- Member, Scientific Advisory Board of GeoSphere Austria (Austrian Federal Institute for Geology, Geophysics, Climatology and Meteorology), 2024-2027
- Member, TEAMxUK Programme Advisory Committee, 2023-
- Member, Global Cryosphere Watch – Advisory Group (GCW-AG) of WMO, 2022-
- Member Scientific Committee International Mountain Conference, IMC2022, 2020 -
- Chairman, Fakultätsrat Fakultät für Geo- und Atmosphärenwissenschaften (chairman, advisory Board, School for Geo and Atmospheric Sciences), March 2021 – Feb 2024
- Member, Study Group on WMO Cryosphere Crosscutting Functions: Global Cryosphere Watch ([SG-CRYO](#)), 2020 -2022
- Member of the ÖAW (Austrian Academy of Sciences) Commission on Climate and Air Quality, 4/2019 – 3/2023
- Member, KIT (Karlsruhe Institute of Technology) Advisory Board 'Earth and Environment'. 2019-
- Member of the Board of the Austrian Meteorological Society, 2017-
- Member of the Senate, University of Innsbruck for the term 2016-2020
- Speaker, Research Center 'Climate: Cryosphere and Atmosphere', University of Innsbruck, 2016 -
- Corresponding Member, Austrian Academy of Sciences, since April 2015
- Member, Intl Commission on Dynamical Meteorology of IAMAS (International Association of Meteorology and Atmospheric Science), 2015 -2023
- Member, Scientific Advisory Board, Helmholtz Programme 'Atmosphere and Climate', Dec 2013 – 18.
- Member, Austrian National IUGG Commission, IAMAS Correspondent, since fall 2012
- Member, HPC Board, Research Platform on High Performance Computing, University of Innsbruck, 2012-2022

- Member, International Advisory Board DRIHM (Distributed Research Infrastructure for Hydrometeorology, EU FP7), since summer 2011
- Member, Scientific Advisory Board of the German Weather Service (Wissenschaftlicher Beirat des Deutschen Wetterdienstes), since summer 2011, deputy chairman 2015-2019
- Chairman, Fakultätsbeirat Fakultät für Geo- und Atmosphärenwissenschaften (chairman, advisory Board, School for Geo and Atmospheric Sciences), March 2011 – Feb 2014
- Member, Program Council Hans-Ertel Centre for Weather related Research, since May 2010, co-chairman 2015-
- Member, working group on Mesoscale Weather Forecasting, World Weather Research Programme (WWRP), 2007-2015.
- Member, COST Domain Committee ESSEM (Earth System Science and Environmental Management): 2006-2008.
- Member, Global Atmosphere Watch – Switzerland: Grant review organization and attribution committee 2006:
- Chairman, International Steering Committee MAP D-PHASE (Forecast Demonstration Project of World Weather Research Programme): 2007-2013
- Member, International Scientific Steering Committee, COPS (Convective Orographic Precipitation Study): 2006-2012
- Member, Editorial Board Boundary-Layer Meteorology, since summer 2004
- Chairman, Steering Committee COSMO (Consortium on Small Scale numerical Modeling) 2005-2008 (member 2003-2008)
- Representative of MeteoSwiss, IKAR-GMES, 2003-2005
- Member, AMS Committee on Mountain Meteorology, for the term 2002-2005
- Member Management Committee, COST 715 (Meteorology Applied to Urban air Pollution Problems)
- Member, MAP Steering Committee (MSC), Mesoscale Alpine Programme (chairman working group on Planetary Boundary Layers)
- Member, Scientific Committee Leonhard Euler Centre (Swiss Pilot Centre of ERCOFTAC)
- Member, scientific steering committee TRAPOS (Optimisation of modelling methods for **TR**Affic **P**ollution in **S**treets): 1997-2001
- Member, scientific steering committee BAT (**B**iosphere-**A**tmosphere-**T**ransfer): EUROTRAC-II project, 1996-2000

Grants held

- 1992-2009 Total grants of >CHF 7.1 Mio, of which >CHF 2.7 Mio as PI
→ SNF, DFG, BBW, ETH, EU (FP5, FP6) and others
- 2010- total grants of >EUR 4.7 Mio, of which >EUR 2.0 Mio as PI
→ FWF, ÖAW, MeteoSwiss, Euregio, UIBK, ACRP, EU (Horizon) and others
- total total grants of >EUR 9.5 Mio, of which >EUR 3.9 Mio as PI (1 EUR = 1.5 CHF in 2010...)

Supervision of Diploma (DA), MSc and Ph.D. theses

- > Ph.D. 29 (ongoing and completed) as main (or co-) supervisor, plus 26 as external reviewer

- > MSc / Diploma theses 42 as main supervisor
- > BSc theses 23 as main supervisor

Teaching

- taught
- many different MSc and BSc courses (Boundary Layer Meteorology, Atmospheric Dynamics, Geophysical Fluid Dynamics, Introduction to Atmospheric Sciences, The Changing Climate System and others) at UIBK
 - many different Diploma, MSc courses (Boundary Layer Meteorology, Air Pollution modeling, Atmospheric Physics, [Introduction to] Climatology and Hydrology, Climate Systems and others) at ETHZ
 - field courses and practicals (UIBK and ETHZ)
 - single topics at summer schools

Publications, summary (Mar 2025):

Total entries Web of Science	132
h-index	48
total citations	7780
without self-citations	7197
average citations per item	64.3
Total # book chapters, etc.	31

latest entry:

Rotach MW and Holtslag AAM: 2025, *Ideal and Real Atmospheric Boundary Layers*, Elsevier, Academic Press, ISBN 978-0-323-95957-5, 317pp.

Five top-cited papers

- Martilli A, Clappier A, Rotach MW: 2002, An urban surface exchange parameterisation for mesoscale models, *Boundary-Layer Meteorology*, **104**, 261-304, <https://doi.org/10.1023/A:1016099921195>, times cited WoS: 880
- Kljun N, Calanca P, Rotach MW, Schmid HP: 2015, A simple two-dimensional parameterisation for Flux Footprint Prediction (FFP), *Geosci. Model Dev.*, **8**, 3695-3713, doi: 10.5194/gmd-8-3695-2015, times cited WoS: 657
- Kljun N, Calanca P, Rotach MW, Schmid HP: 2004, A simple parameterization for flux footprint predictions, *Boundary-Layer Meteorology* **112**: 503–523, <https://doi.org/10.1023/B:BOUN.0000030653.71031.96>, times cited WoS: 614
- Rotach MW, Vogt R, Bernhofer C, Batchvarova E, Christen A, Clappier A, Feddersen B, Gryning SE, Mayer H, Mitev V, Oke TR, Parlow E, Richner H, Roth M, Roulet YA, Ruffieux D, Salmond J, Schatzmann M, Voogt JA: 2005, BUBBLE – an Urban Boundary Layer Project, *Theoretical Appl Climatol* **81**(3-4), 231 – 261, <https://doi.org/10.1007/s00704-004-0117-9>, times cited WoS: 312
- Kljun N, Rotach MW, Schmid HP: 2002, A 3D Backward Lagrangian Footprint Model for a Wide Range of Boundary Layer Stratifications, *Boundary-Layer Meteorology*, **103**, 205-226, <https://doi.org/10.1023/A:1014556300021>, times cited WoS: 217