

**Education**

- 1989                      Diploma in Physics, University of Wuppertal
- 1994                      PhD in Physics, University of Wuppertal  
Thesis title: Das CRISTA-Meßsystem: Struktur und Anwendungen
- 2001                      Habilitation in Physics, University of Wuppertal  
Thesis title: Remote Sensing and Modelling of the Earth's Middle  
Atmosphere: Results of the CRISTA Experiment
- 1997 - 1998              Visiting Scientist, National Center for Atmospheric Research  
(NCAR), Boulder, Colorado (12 months)

**Professional Positions**

- 2002 - 2010              Director of Institute of Chemistry and Dynamics of the Geosphere  
(ICG-1), Forschungszentrum Jülich GmbH
- Since 2010              Director of Institute of Energy and Climate Research (IEK-7),  
Forschungszentrum Jülich GmbH
- Since April 2003        Full Professor for Atmospheric Physics,  
Faculty for Mathematics and Natural Science, University of Wuppertal

**Committees and Boards**

- Since 2022              Chair, Scientific Council (WTR) of Forschungszentrum Jülich GmbH
- Since 2022              Board of Directors, Interdisciplinary Centre for Atmosphere and Environment  
at the University of Wuppertal
- 2019 - 2022              Chair, JuDocs Council of Forschungszentrum Jülich (Jülich PhD programme  
with ~1000 PhD students)
- 2020 – 2023              Advisory Council “Klimaschutz NRW” of the state of North Rhine  
Westphalia
- Since 2018              Mission Advisory Group of ESA's Earth Explorer 9 mission FORUM
- 2016 - 2020              Review Board for Atmosphere, Ocean, and Climate, German Science  
Foundation (DFG), Elected Member
- 2012 - 2016              Review Board for Atmosphere and Ocean, German Science Foundation  
(DFG), Elected Member
- Since 2014              Scientific Steering Committee, High Altitude and Long Range Research  
Aircraft (HALO)
- 2017-2019              Management Board of Helmholtz Research Area “Earth and Environment”;  
Permanent Guest
- 2015 - 2018              Copernicus Medal Award Committee

2015	Chair, Scientific Evaluation Board, DLR Institute for Physics of the Atmosphere (IPA), Oberpfaffenhofen
2015	Review Board of Evaluation of the Leibniz Institute for Tropospheric Research (TROPOS)
2006-2014	Chair, Scientific Advisory Board of Leibniz-Institute for Atmospheric Physics, Kühlungsborn
2006-2013	Board of Trustees of Leibniz-Institute for Atmospheric Physics, Kühlungsborn, Germany
2009-2013	Mission Advisory Group of ESA´s Earth Explorer candidate PREMIER
2006-2009	Mission Assessment Group of ESA´s Earth Explorer candidate PREMIER
2006	Scientific Advisory Board for Program ATMO at Karlsruhe Institute for Technology (KIT)

### **Other Scientific Leadership**

2023	Scientific Coordinator, HALO research aircraft mission PHILEAS (Alaska)
2019	Scientific Co-Coordinator, HALO research aircraft mission SouthTRAC-Dyn (Argentina)
2017	Scientific Coordinator, HALO research aircraft mission WISE (Ireland)
2015 - 2018	Group Leader, Helmholtz – Chinese Academy of Science (CAS) Joint Research Group “Climatological impact of increasing anthropogenic emissions over Asia”
2010-2011	Coordinator, PREMIER science impact study
2004-2009	Spokesman, Virtual Helmholtz-institute „Centre Tropical Tropopause“

### **PhD supervision**

Since 2003	PhD father (37 PhD students), Second Reviewer (18 PhD students)
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### **Helmholtz-Association (Program-oriented funding)**

Since 2021	Spokesman, Cooperation across Research Fields (CARF) Remote Sensing
2014-2017	Steering Committee of Helmholtz Research Area “Earth and Environment“, Permanent Guest
2014-2020	Deputy-Spokesman, Helmholtz-program „Atmosphere and Climate“
2014-2020	Spokesman, Topic „Composition and Dynamics of the Upper Troposphere and Middle Atmosphere“, Helmholtz program “Atmosphere and Climate”
2013 - 2020	Spokesman (FZJ), for Earth System Knowledge Platform (ESKP)
2009 - 2013	Spokesman, Topic „Composition and Dynamics of the Upper Troposphere and Stratosphere“, Helmholtz-program „Atmosphere and Climate“.
2007-2012	Spokesman, Topic “Chemistry and Dynamics of the Atmosphere“, Helmholtz-network EOS (Earth Observation System)

2010	Steering Committee, Portfolio-Process of Helmholtz Research Area „Earth and Environment“
2004-2008	Spokesman, Topic „Stratosphere and Tropopause Region in a Changing Climate“, Helmholtz-program „Atmosphere and Climate“

### **Forschungszentrum Jülich**

Since 2002	Scientific Council (WTR), Chair since 2021
2022-2023	Search Commission for Chair of Board of Directors
2022	Search Commission for Member of Board of Directors (VS-II)
2020	Acting Director, Institute for Energy and Climate Research (IEK)
2005, 2009, 2010	Acting Director, Institute for Chemistry and Dynamics of the Geosphere (ICG)
2005, 2010, 2020, 2022	Executive Committee (HK) of Science Council
2019-2022	JuDocs Council, Chair (about 1000 PhD students)
Since 2011	Steering Committee HITEC Graduate School (Jülich Helmholtz Graduate School for Energy and Climate)
2011-2013	IT Steering Committee
2005-2008	Chair, Jülich PhD Student Program Board (400 PhD students)
2005-2008	Selection Committee „Günther Leibfried Preis“
2011-2015	Chair, W3 Appointment Committees, Directors IEK-1, IEK-8, IEK-9, IBG-2
2023	W3 Appointment Committee, Director IEK-8

### **University of Wuppertal:**

Since 2003	W2/C4 Appointment Committees (3)
2003 – 2013	Habilitation committees (5)

### **Community Service:**

Since 2008	Guest-Editor, EGU-Journal “Atmospheric Measurement Techniques”
1996, 2000	Editor, Advances in Space Research
2010	DACH conference, Bonn, Organization panel
2013	ESA Living Planet Symposium, Edinburgh, Organization panel
2014	COSPAR, Moscow, Deputy-Organizer
2016	ESA ATMOS Conference, Iraklion, Organization panel

2010/14/18, 22      Reviewer „WMO Scientific Assessment of Ozone Depletion“

Reviewer for international journals and funding agencies  
(USA, EU, UK, Schweden, Belgien, Niederlande, India ...)

Reviewer for national funding agencies (DFG, Humboldt,  
BMBF, Helmholtz ...)

### Memberships

German Physical Society (DPG)

American Geophysical Union (AGU)

Development Association, Rhenish Institute for  
Environmental Research (RIU) at University of Cologne

### Awards

1994, 1997      ASTRO-SPAS Award of German Space Agency (DARA)

1994      ATLAS-3 Award of National Aeronautics and Space Administration  
(NASA)

### Current Research Interest

- Role of the atmosphere in the climate system
- Transport of atmospheric trace gases incl. pollutants
- Satellite and aircraft instrumentation
- Infrared limb-sounding of the atmosphere

### Publications (statistics)

193 Peer-reviewed Publications: H= 42 (WOS), H= 48 (Google Scholar)

### Selected Publications

Charlesworth, E., Plöger, F., Birner, T. ..., and **Riese M.**, Stratospheric water vapor affecting atmospheric circulation, *Nature Communications* 14, 3925, <https://doi.org/10.1038/s41467-023-39559-2>, 2023

Höpfner, M., Ungermann, J., Borrmann, S., Wagner, R., Spang, R., **Riese, M.** *et al.* Ammonium nitrate particles formed in upper troposphere from ground ammonia sources during Asian monsoons. *Nature Geosciences*, 12, 608–612, <https://doi.org/10.1038/s41561-019-0385-8>, 2019

**Riese, M.**, Ploeger, F., Rap. B. Vogel, P. Konopka, M. Dameris, and P. Forster, Impact of uncertainties in atmospheric mixing on simulated UTLS composition and related radiative effects, *Journal of Geophysical Research*, doi:10.1029/2012JD017751, 2012

**Riese, M.**, F. Friedl-Vallon, R. Spang, P. Preusse, C. Schiller, L. Hoffmann, H. Oelhaf, T. von Clarmann, and M. Höpfner, Global Limb Radiance Imager for the Atmosphere (GLORIA): scientific objectives, *Advances in Space Research*, 36, 989 – 995, 2005

**Riese, M.**, Spang, R., Preusse, P., Ern, M., Jarisch, M., Offermann, D., Grossmann, K.U.: Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere (CRISTA) data processing and atmospheric temperature and trace gas retrieval, *Journal of Geophysical Research*, 104, 16,349-16,367, 1999