

Bernhard Rappenglück
Professor - Atmospheric Science

Department of Earth and Atmospheric Sciences (EAS), University of Houston
(713) 743-2469; brappenglueck@uh.edu

Professional Preparation

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|---------------------------------------|-----------------------|--------------|------|
| Munich University of Technology (TUM) | Atmos. Environ. Chem. | Habilitation | 2003 |
| University of Munich (LMU) | Physics | Ph.D. | 1996 |
| University of Munich (LMU) | Meteorology | M.S. | 1991 |
| Munich University of Technology (TUM) | Technical Physics | B.S. | 1985 |

Appointments

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| Director | Inst. Climate & Atmos Sci, Dpt. of EAS | since Feb 2020 |
| Full Professor | University of Houston, Dpt. of EAS | since Sep. 2016 |
| Associate Professor | University of Houston, Dpt. of EAS | Sept 2004 – Aug 2016 |
| Sen. Res. Scientist | Res. Cent. Karlsruhe IMK-IFU | Apr 2001 – Aug 2004 |
| Research Scientist | LMU/TUM, Munich Bioclim&AirPollRes | Jan 1991 – Mar 2001 |

Research Interests

- 1) Biosphere-atmosphere exchange, boundary layer processes and mesoscale meteorology.
- 2) Quantification of trace gas budgets (e.g. carbon monoxide [CO], volatile organic compounds [VOC], peroxides [RO₂], nitrogen oxides [NO_x], peroxyacyl nitrates [PANs], ozone [O₃], sulfur dioxide [SO₂]) in unpolluted and polluted areas (e.g. Munich, Berlin, Athens, Santiago de Chile, Mexico City, Los Angeles, Houston, Dallas).
- 3) Atmospheric radical chemistry involving formaldehyde [HCHO], hydrogen peroxide [H₂O₂] and nitrous acid [HONO],
- 4) Source apportionment for primary pollutants.
- 5) Application and development of chemistry-transport modeling.

Professional Experience

University of Houston

Within the Department of Earth and Atmospheric Sciences teaching addresses areas of atmospheric chemistry and meteorology. Lead in the implementation of the Master and PhD degree program in Atmospheric Science (MS approved in 2007; PhD approved in 2010). Currently, implementation of BS degree program in Atmospheric Science.

Research foci address the determination of anthropogenic and biogenic contributions to the formation of secondary compounds in the atmosphere, more precisely the impact of volatile organic compounds (VOC) on the formation of peroxyacyl nitrates (PANs) and the role of formaldehyde and H₂O₂ in photochemical processes. Implementation of the necessary laboratory infrastructure for measurements of O₃, NO, NO₂, NO_x, CO, HCHO, H₂O₂, speciated PANs, speciated VOCs (online/offline) and meteorological parameters, including the preparation and use of different measurement platforms, e.g. ground-based and rooftop measurement sites, micrometeorological towers, airborne sondes, and aircraft. Participation in the NCAR PAN intercomparison experiment *PIE*. In collaboration with UNAM/Mexico City, performance of PAN and PPN measurements at the Paso de Cortes (4.000 m a.s.l) in the outflow of Mexico City – first continuous day- and nighttime PAN and PPN measurements at this altitude in this area. Airborne measurements along the US-Mexican border to study the impact of biomass burning plumes.

Coordination of the ground-based supersite of the TexAQS-II campaign on the campus of the University of Houston (about 50 scientists and 20 measurement groups). Lead of the “TexAQS-II Radical Measurement Project” (*TRAMP*). In addition, responsible for atmospheric sounding activities using radiosondes, ozone-sondes, a tether sonde system and aircraft missions for the determination of the spatial and temporal distribution of photochemically relevant trace gases during TexAQS-II. These studies addressed possible impacts of large scale transports and investigated boundary layer processes which are typically influenced by regional

land sea breeze circulation and convective processes in the Houston-Galveston area. Member of various TexAQS-II Rapid Science Synthesis Working Groups.

Co-PI on the project “Study of Houston Atmospheric Radical Precursors (SHARP)” which investigates primary emissions of radical precursors HCHO and HONO. This includes potentially aerosol induced HONO emission by traffic sources as well as HONO emissions induced on different urban surfaces. Coordination of airborne measurements to investigate radical sources in the Houston area. In collaboration with Chalmers University/Göteborg, Sweden the project *SOF* applies solar occultation flux methods to investigate emissions of highly reactive hydrocarbons from industrial sources.

Supported by the US EPA implementation of a research grade ambient air measurement network in Houston consisting of 5 monitoring sites (*H-NET*).

Experimental research focus on HONO addresses traffic emissions in Houston and Santiago de Chile (the latter in collaboration with Universidad de Chile and Universität Wuppertal), and ozone related chemistry during wintertime in the upper Green River Basin, Wyoming. Participation in the project FIONA “Formal Intercomparison of Observations of Nitrous Acid” in the EUPHORE smog chamber in Valencia/Spain.

Research also includes application and validation of meteorological and air quality modeling using WRF-CMAQ. Studies for population exposures to 1,3-Butadiene in the Houston Metropolitan area using CMAQ. Initiated implementation of CMAQ 4.7, including enhanced HONO chemistry modules. Analysis of boundary layer and micrometeorological processes in WRF.

Currently implementation of a GCxGC/MS Facility for Multidisciplinary Applications at EAS.

Founding member of Research Consortium (Atmospheric Chemistry of Siberia) together with Boris D. Belan (V.E. Zuev Institute of Atmospheric Optics, SB RAS, Tomsk, Russia) and Anatoly K. Golovko (Institute of Petroleum Chemistry SB RAS, Tomsk, Russia).

In 2013 I served as a Principle Investigator for the Qatar Environment and Energy Research Institute (QEERI) in Doha/Qatar and guided on the strategies in Air Quality research and on the implementation of Air Quality infrastructure completely funded by Qatar Foundation. First air quality analysis in the Middle East using ozonesondes including first WRF modeling.

Project funds come from a variety of sources, among them:

- Houston Advanced Research Center (HARC)
- Environmental Institute of Houston (EIH)
- Texas Air Research Center (TARC)
- Texas Commission on Environmental Quality (TCEQ)
- U.S. EPA
- Meteorological Solutions Inc. (MSI)
- Environ International
- NuHorizon
- National Center for Atmospheric Science (NCAR)
- European Union (EU)
- German Academic Exchange Service (DAAD)
- German Aerospace Center (DLR)
- various universities: Baylor University (BU),
Valparaiso University (Valpo),
Universidad Nacional Autónoma de México (UNAM),
Pontificia Universidad Católica de Chile (PUC)
Universidad de Santiago de Chile (USACH)

During the time frame 2005-2021 Rappenglueck served as a PI on grants which totaled \$3.3 million. He was co-PI on additional grants of \$4.4 million. Sabbatical Leave 2013, Qatar Environment and Energy Research Institute (QEERI) in Doha/Qatar.

Institute for Meteorology and Climate Research, Atmospheric Environmental Research Section (IMK-IFU), Research Center Karlsruhe GmbH (FZK), Garmisch-Partenkirchen:

Focus of scientific work lies in the quantification of trace gas budgets and their dynamics in the atmosphere. These activities include the characterization of anthropogenic and biogenic sources, the determination of trace gas exchange processes, air quality studies in megacities and studies of trace gas distribution and long-range transport processes in the troposphere. Contributed to microscale studies of diffuse emissions sources at the airport of Zurich as well as to airborne measurements aimed at intercontinental transport studies during the CONTRACE and ICARTT-ITOP projects. Conducted air quality studies in Santiago de Chile. Responsible for micrometeorological studies related to biosphere-atmosphere exchanges in remote forest areas with a focus on relaxed-eddy-accumulation (REA) methods coupled to GC and PTR-MS for determining turbulent fluxes of biogenic VOC (*BEWA2000*). Another *BEWA2000* project focused on the design of a sampling device for carboxylic acids, degradation products of biogenic hydrocarbons.

Since 2004: Head of the Air Quality QA/QC-Group at the IMK-IFU for inorganic gas-phase compounds.

Since 2002: Head of the World Calibration Center for VOC (WCC-VOC) within the WMO-GAW program. Carried out worldwide VOC-intercomparison studies and first GAW station audits (*WCC-VOC*). Held courses and compiled course materials for personnel from worldwide Global Atmosphere Watch (GAW) stations at the, International GAW Training & Education Center (GAWTEC) of the WMO, Environmental Research Station Schneefernerhaus – UFS (lectures: “Chemistry and Emissions of VOCs”, “Sampling and Measurement Techniques of VOCs”, and “Quality Assurance of VOC measurements”). Since 2003 member of the Science Advisory Group for Reactive Gases (SAG-RG) of GAW

Chair of Bioclimatology and Air Pollution Research, Ludwig-Maximilians-Universität [LMU] (since 1999 Technische Universität München [TUM]), München

Since 1992: Establishment of VOC facilities / Head of VOC-Laboratory

Conducted extensive experimental research in the field of photochemical and meteorological processes in the troposphere. These investigations aimed at a better understanding of the impact of human activities upon atmospheric chemistry. A variety of studies focused on urban air quality issues (e.g. MEDPHOTRAC, MEDCAPHOT, CHILE-I, BERLIOZ) and were often related to human health aspects (e.g. KOVOX). The study of background ozone and its dependence on the chemical environment and radiation properties in remote areas was focus of the projects PAUR-I and PAUR-II. Also, biosphere-atmosphere interactions were studied, e.g. through contributions to the interdisciplinary project SFB607 and within the project ETWA focusing on forest trees that are exposed to stress ambient O₃ levels.

Apart from measurement techniques for ozone, nitrogen oxides, carbon monoxide and total VOC, measurement devices included different systems for PAN (GC/ECD, GC/Luminox) and up to 3 on-line VOC-GCs. Corresponding new laboratory facilities were implemented.

Field measurement campaigns were carried out within the framework of national and international projects, both in urban areas, e.g. Munich and Berlin/Germany, Athens/Greece and Santiago/Chile, and in rural areas, e.g. Alpine locations, mountainous regions in central Greece or on islands in the Greek Aegean Sea region (Aghios Efstratios, Crete). Within the campaigns usually a variety of scientific platforms were used, among them micrometeorological towers (SFB 607, ETWA), radio towers (Frohnau Tower, 324 m; BERLIOZ), cruising vessels (PAUR-II), cable-ways (OPAP) and a manned H₂ free balloon (BERLIOZ).

Teaching Experience

University of Houston *(in brackets number of students)*

| Atmospheric Science Graduate Advisor | |
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| <i>Fall 2006 - Fall 2011:</i> | <i>Fall 2024 (scheduled):</i> |
| <i>Spring 2024:</i> GEOL 1347 "Introduction to Meteorology" ¹⁾ (93) GEOL 1147 "Introduction to Meteorology Lab" ³⁾ (27) | GEOL 4340 "Aerosols and Climate w/Lab" ³⁾ (N/A) GEOL 6321 "Aerosols and Climate w/Lab" ³⁾ (N/A) |
| <i>Spring 2023:</i> GEOL 3342 "Principles of Air Pollution" (24) | <i>Fall 2023:</i> GEOL 4346 "Air Pollution Meteorology w/Lab" (19) GEOL 6332 "Air Pollution Meteorology" (4) GEOL 3382 "Atmospheric Chemistry" (13) GEOL 3382 "Atmospheric Chemistry-Lab" ³⁾ (13) GEOL 6334 "Atmospheric Chemistry" (7) GEOL 6396 Seminar "Atmospheric Sciences" (8) |
| <i>Spring 2022:</i> GEOL 6326 "Remote Sensing for Atmospheric Science" ³⁾ (5) GEOL 6326 "Remote Sensing for Atmospheric Science -Lab" ³⁾ (5) GEOL 4348 "Remote Sensing for Atmospheric Science" ³⁾ (9) GEOL 4348 "Remote Sensing for Atmospheric Science Lab" ³⁾ (9) | <i>Fall 2022:</i> GEOL 1347 "Introduction to Meteorology" ¹⁾ (151) GEOL 1147 "Introduction to Meteorology Lab" ³⁾ (41) |
| <i>Spring 2021:</i> GEOL 3342 "Principles of Air Pollution" (25) | <i>Fall 2021:</i> GEOL 1350 "Introduction to Meteorology" ¹⁾ (136) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (41) GEOL 3382 "Atmospheric Chemistry" (16) GEOL 3382 "Atmospheric Chemistry-Lab" ³⁾ (16) GEOL 6334 "Atmospheric Chemistry" (9) GEOL 6396 Seminar "Atmospheric Sciences" (8) |
| <i>Spring 2020:</i> GEOL 6336 "Boundary Layers and Turbulence" (4) GEOL 3381 "Micrometeorology" (9) | <i>Fall 2020:</i> GEOL 1350 "Introduction to Meteorology" ¹⁾ (223) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (46) GEOL 4346 "Air Pollution Meteorology w/Lab" (24) GEOL 6332 "Air Pollution Meteorology" (12) |
| <i>Spring 2019:</i> GEOL 3342 "Principles of Air Pollution" (27) | <i>Fall 2019:</i> GEOL 1350 "Introduction to Meteorology" ¹⁾ (191) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (46) GEOL 6396 Seminar "Atmospheric Sciences" (11) |
| <i>Spring 2018:</i> GEOL 6332 "Air Pollution Meteorology" ²⁾ (2) GEOL 4346 "Air Pollution Meteorology" ²⁾ (12) | <i>Fall 2018:</i> GEOL 1350 "Introduction to Meteorology" ¹⁾ (172) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (47) GEOL 6326 "Remote Sensing for Atmospheric Science" ³⁾ (5) GEOL 6326 "Remote Sensing for Atmospheric Science -Lab" ³⁾ (5) GEOL 4348 "Remote Sensing for Atmospheric Science" ³⁾ (2) GEOL 4348 "Remote Sensing for Atmospheric Science Lab" ³⁾ (2) |
| <i>Spring 2017:</i> GEOL 3342 "Principles of Air Pollution" (25) GEOL 3178 "Weather Information" (3) | <i>Fall 2017:</i> GEOL 1350 "Introduction to Meteorology" ¹⁾ (217) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (59) GEOL 3178 "Weather Information" (5) GEOL 6396 Seminar "Atmospheric Sciences" (6) |
| <i>Spring 2016:</i> GEOL 6332 "Air Pollution Meteorology" ²⁾ (1) GEOL 4346 "Air Pollution Meteorology" ²⁾ (17) GEOL 3178 "Weather Information" (5) | <i>Fall 2016:</i> GEOL 1350 "Introduction to Meteorology" ¹⁾ (273) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (58) GEOL 6397 "Remote Sensing for Atmospheric Science" ³⁾ (5) GEOL 4397 "Remote Sensing for Atmospheric Science" ³⁾ (2) GEOL 3178 "Weather Information" (3) |

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| <i>Spring 2015:</i> | <i>Fall 2015:</i> |
| GEOL 3342 "Principles of Air Pollution" (49) GEOL 6396 Seminar "Atmospheric Sciences" (8) GEOL 3178 "Weather Information" (7) | GEOL 1350 "Introduction to Meteorology" ¹⁾ (175) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (45) GEOL 3178 "Weather Information" (3) |
| <i>Spring 2014:</i> | <i>Fall 2014:</i> |
| GEOL 6336 "Boundary Layers and Turbulence" (4) GEOL 3381 "Micrometeorology" (9) | GEOL 6332 "Air Pollution Meteorology" ²⁾ (6) GEOL 4397 "Air Pollution Meteorology" ²⁾ (13) GEOL 1350 "Introduction to Meteorology" ¹⁾ (165) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (46) GEOL 3178 "Weather Information" (10) |
| <i>Spring - Fall 2013: Sabbatical Leave, Qatar Environment and Energy Research Institute, Doha/Qatar</i> | |
| <i>Spring 2012:</i> | <i>Fall 2012:</i> |
| GEOL 6336 "Boundary Layers and Turbulence" (4) GEOL 3381 "Micrometeorology" (3) GEOL 3178 "Weather Information" (10) | GEOL 1350 "Introduction to Meteorology" ¹⁾ (107) GEOL 1150 "Introduction to Meteorology Lab" ³⁾ (11) GEOL 3178 "Weather Information" (8) |
| <i>Spring 2011:</i> | <i>Fall 2011:</i> |
| GEOL 6332 "Air Pollution Meteorology" ²⁾ (3) GEOL 4397 "Air Quality Forecasting" ²⁾ (11) GEOL 3342 "Introduction to Air Pollution" (19) GEOL 3178 "Weather Information" (5) | GEOL 1350 "Introduction to Meteorology" ¹⁾ (129) GEOL 3178 "Weather Information" (8) |
| <i>Spring 2010:</i> | <i>Fall 2010:</i> |
| GEOL 6334 "Atmospheric Chemistry" (3) GEOL 6396 Seminar "Atmospheric Sciences" (5) GEOL 3382 "Atmospheric Chemistry" (7) GEOL 3178 "Weather Information" (5) | GEOL 6336 "Boundary Layers and Turbulence" ²⁾ (3) GEOL 3381 "Micrometeorology" ²⁾ (6) GEOL 1350 "Introduction to Meteorology" ¹⁾ (147) GEOL 3178 "Weather Information" (9) |
| <i>Spring 2009:</i> | <i>Fall 2009:</i> |
| GEOL 3342 "Introduction to Air Pollution" (13) GEOL 1350 "Introduction to Meteorology" ¹⁾ (150) GEOL 3178 "Weather Information" (7) | GEOL 3378 "Principles of Atmospheric Science" (36) GEOL 3178 "Weather Information" (8) |
| <i>Spring 2008:</i> | <i>Fall 2008:</i> |
| GEOL 3342 "Introduction to Air Pollution" (4) (co-taught with Dr. Byun) GEOL 1350 "Introduction to Meteorology" ¹⁾ (190) GEOL 3178 "Weather Information" (7) | GEOL 6397 "Atmospheric Chemistry" (6) GEOL 3382 "Atmospheric Chemistry" (5) GEOL 1350 "Introduction to Meteorology" (150) GEOL 3178 "Weather Information" (8) |
| <i>Spring 2007:</i> | <i>Fall 2007:</i> |
| GEOL 6334 "Air Pollution Chemistry & Physics" ²⁾ (4) GEOL 3382 "Atmospheric Chemistry" ²⁾ (4) GEOL 1350 "Introduction to Meteorology" (57) GEOL 3178 "Weather Information" (9) | GEOL 6379 "Integrated Biogeochemistry Studies" ³⁾ (4) GEOL 1350 "Introduction to Meteorology" ¹⁾ (109) GEOL 3178 "Weather Information" (10) |
| <i>Spring 2006:</i> | <i>Fall 2006:</i> |
| GEOL 3378 "Introduction to Atmos. Sciences" (34) | GEOL 3342 "Introduction to Air Pollution" (9) GEOL 1350 "Introduction to Meteorology" ¹⁾ (50) GEOL 3178 "Weather Information" (11) |
| <i>Summer 2006</i> GEOL 4398 "Data Analysis in Environmental Science" (4) (co-taught with Dr. Byun) | |
| <i>Spring 2005:</i> | <i>Fall 2005:</i> |
| GEOL 3342 "Introduction to Air Pollution" (8) | GEOL 3342 "Introduction to Air Pollution" (7) GEOL 6379 "Integrated Biogeochemistry Studies" ³⁾ (3) |

¹⁾ Core Course since Fall 2006, ²⁾ Course in Graduate or Undergraduate Course Catalog, but taught first time, ³⁾ Entirely new courses.

Institute for Meteorology and Climate Research, Atmospheric Environmental Research Section (IMK-IFU), Research Center Karlsruhe GmbH (FZK), Garmisch-Partenkirchen:

2002 – 2003, courses for Global Atmosphere Watch (GAW): "Chemistry and Emissions of VOCs", "Sampling and Measurement Techniques of VOCs", and "Quality Assurance of VOC measurements", International GAW Training & Education Center (GAWTEC) of the WMO

Munich University of Technology (TU Munich)

Winter Semester 1999/2000 and Winter Semester 2000/2001: Atmospheric Environmental Chemistry

Mentoring – Research Supervision / Group Members:

Undergraduates:

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|--|--|
| José Mojica (2006) | SURF ¹⁾ , Summer 2006 |
| Paulina Guerrero (2006) | |
| Leonardo Pedemonte (2006-2008) | |
| Renee Boudreaux (2006-2007) | |
| Aaron Chow (2007) | |
| John Massingdale (2007-2008; 2010-2012) | |
| Mitul Patel (2007) | |
| Giovanna Croxatto (2008-2009) | PURS ²⁾ , Spring 2009 |
| Luis Ackermann Nucete (2009-2011) | |
| Peter Nguyen (2010) | |
| Adam Spitzmueller (2010-2012) | |
| John Martinez (2012) | Alliance/Merck Science Hispanic Scholars Program |
| Daniel Knez (2016) | Senior Project Summer and Fall 2016 |
| Marco Esteban Avendano (2015-2016) | SURF ¹⁾ , Summer 2016 |
| Mina Song (2016-2017) | PURS ²⁾ , Fall Semester 2016 |
| Mina Song (2016-2017) | Senior Project Summer and Fall 2017 |
| Linh Do (2016-2017) | |
| Anthony Der Tatevasion (2017) | |
| Juliana Tortato de Oliveira (2017) | |
| Alyssa Holler (2017-2019) | Senior Project Fall 2018 and Spring 2019 |
| John King (2019) | |
| Chika Okoro (Spring 2019 - Spring 2020) | |
| Cinthy Saravia (Spring 2023 – Fall 2023) | Capstone Project in Spring and Fall 2023 |
| Alexa Olivi (since Summer 2023) | |
| Alexa Olivi | UH Energy Scholar Spring and Fall 2024 |

¹⁾ SURF: Provost's Undergraduate Research Scholarship during Summer

²⁾ PURS: Provost's Undergraduate Research Scholarship during Academic year

Teaching Assistants:

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|---|-------------|
| Ryan Perna (2006-2007) | MS 2007 |
| Monica Patel (2007-2008) | MS 2008 |
| Marc Taylor (2008-2010) | MS 2010 |
| Cari-Sue Wilmot (2010-2011) | MS 2013 |
| Teresa Spohn (2012-2013) | MS 2013 |
| Jaymason Shelton (2014-2016) | MS student |
| Vanessa Caicedo (2015-2017) | PhD student |
| Olabosipo Osibanjo (2016-2021) | PhD student |
| Morshad Ahmed (since 2019) | PhD student |
| Madeline Statkewicz (2019-2023) | PhD student |
| Tanzina Akther (since 2020) | PhD student |
| Jahirul Alam (since 2021) | PhD student |
| FNU Anshika (since 2022) | PhD student |
| Olanrewaju Soneye-Arogundade (since 2023) | PhD student |
| Farah Jeba (since 2023) | PhD student |

Research Assistants:

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|---------------------------------------|---|
| Richard Fuller (2005-2008; 2009-2011) | transferred to UH Dept. of Curriculum and Instruction |
| Bridget McEvoy-Day (2006-2008) | MS 2008 |
| Cari-Sue Wilmot (2011) | MS 2013 |
| Chika Okoro (Fall 2019-Spring 2020) | |

Technicians:

Leonardo Pedemonte (2008-2011)

BS University of Houston

Giovanna Croxatto*) (2009-2011)

BS University of Houston

*) obtained MS degree in the European Master Program in Environmental Science at the University of Copenhagen/Denmark (2013)

Researcher:

Luis Ackermann*) (2012-2013)

*) now Research Associate with the Qatar Environment and Energy Research Institute (QEERI), Doha/Qatar

Primary Advisor MS Students:

Ryan Perna¹⁾
completed 2007

An Insight into the Vertical Structure of the Atmosphere during TEXAQS-II: Understanding the Effect of the Upper-level Meteorology on Houston's Surface Ozone Levels

Bridget McEvoy-Day²⁾
completed 2008

Characteristics of the Nocturnal Boundary Layer in Houston, Texas during TexAQS II

Marc Taylor³⁾
completed 2010

Vertical Concentrations of Ozone in a pre- and postfrontal Environment over Houston, Texas, from July 2004 to May 2009

Cari-Sue Wilmot⁴⁾
completed 2013

Evaluating WRF Model Atmospheric Boundary Layer Simulations for a Coastal Region in Southeast Texas

Teresa Spohn⁵⁾
completed 2013

Tracking Potential Sources of Peak Ozone Concentrations in the Arabian Gulf Region

Michele Kocen⁶⁾
completed 2013

Observations of Sea-Breeze Fronts Along the Houston Gulf Coast

Patrick Blood⁷⁾
completed 2014

The Optimization of Southeast Texas Extreme Rainfall Prediction utilizing the Weather Research and Forecast - Environmental Modeling System

Luis Ackermann⁸⁾
completed 2016

Characterization of Photochemical Processes in Doha, Qatar

Jarrett Davidson
completed 2018

Analysis of the Extreme Rainfall Events during Hurricane Harvey and Tropical Storm Allison

¹⁾ now with TCEQ, Houston/TX, ²⁾ now with Det Norske Veritas (DNV), Houston/TX, ³⁾ with TRC Solutions, Houston/TX, ⁴⁾ now with TechnoCycle, Houston/TX, ⁵⁾ now PhD student at National University of Ireland, Galway, ⁶⁾ now with ARES Corp., Houston/TX, TX, ⁷⁾ Meteorologist with NOAA, Houston, TX, ⁸⁾ now PhD Student Monash U, Melbourne, Australia

Primary Advisor PhD Students:

Kelly Soich¹⁾
(completed Fall 2012) *)

Forecast Vertical Velocity and Temperature, Horizontal Wind Direction and Wind Velocity Error Coupling within Upper Troposphere MM5 and WRF Forecasting

Gustavo Cuchiara²⁾
(completed Fall 2015)

Simulating the Evening Transition in the PBL and Evaluating its Contribution to the Next Day Prediction Ozone Peak Concentration

Vanessa Caicedo³⁾
(completed Spring 2017)

Investigating the Temporal, Seasonal, and Spatial Evolution of the Atmospheric Boundary Layer using Aerosol Backscatter Retrieval Methods

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|---|---|
| Olabosipo Osibanjo ⁴ (completed Spring 2021) | <i>Boundary Layer Properties and Implications on Air Quality in Mexico City</i> |
| Madeline Statkewicz ⁵ (completed Spring 2023) | <i>The Impact of Changing Precipitation Patterns on Flooding Occurrences in a Rapidly Growing Urban Area</i> |
| Mateen Ahmad (planned Summer 2024) | <i>Machine Learning Approaches for Ozone Forecast, Planetary Boundary Layer Height Retrieval and WRF model Bias-Correction</i> |
| Morshad Ahmed (planned Summer 2024) | <i>Sources and Photochemical Behavior of Atmospheric Pollutants (Nitrophenols, Mercury, and Non-Methane Hydrocarbons) in the Houston, Texas, Area</i> |
| Tanzina Akther (planned Fall 2024) | <i>Reactive Organic Carbon (ROC) Emissions from Unconventional Sources and their Impact on Air Quality</i> |
| Irfan Karim (planned Fall 2024) | <i>Characterizing Emission Sources of CO₂ and CH₄ in Houston using Isotopic $\delta^{13}C$ Signatures</i> |
| Jahirul Alam (planned 2025) | <i>Per- and Polyfluoroalkyl Substances (PFAS) in Air, Water, and Soil and their Impact on Air Quality</i> |
| Anshika FNU (planned 2026) | <i>The Occurrence and Fate of Phtalates in Ambient Air</i> |
| Olanrewaju Soneye-Arogundade (planned 2027) | TBD |
| Farah Jeba (planned 2027) | TBD |

¹⁾ Director of Programs, Chief Payload Specialist, Waypoint 2 Space, NASA Johnson Space Center, Houston/TX, ²⁾ now Research Scientist, CIRA, Colorado State U., Fort Collins, ³⁾ now PostDoc at Joint Center for Earth Systems Technology, University of Maryland, Baltimore, MD, ⁴⁾ now PostDoc with FM Global Insurance, Boston, MA, ⁵⁾ now Project Scientist with All4, Houston, TX

Primary Supervisor PostDocs:

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| Dr. Michael Leuchner ¹⁾ (2006-2008) | DAAD Fellow, PhD TU München, Germany |
| Dr. Violeta Coarfa ²⁾ (2007-2008) | PhD University of Houston |
| Dr. Julia Golovko ³⁾ (2008-2013) | PhD Tomsk State University, Tomsk, Russia |
| Dr. Beata Czader ⁴⁾ (2009-2013) | PhD University of Houston |
| Dr. Fong Ngan ⁵⁾ (2009) | PhD University of Houston |
| Dr. Gustavo Cuchiara ⁶⁾ (2016-2017) | PhD University of Houston |

¹⁾ now Faculty, RWTH Aachen, Germany, ²⁾ now Teaching Faculty, Lone Star College and Houston Community College, Houston/TX, ³⁾ now DESC Engineer, Schlumberger, Houston/TX, ⁴⁾ now Natural Resources Specialist V, TCEQ, Austin, ⁵⁾ now Research Scientist, NOAA-ARL, College Park/MD, ⁶⁾ now Research Scientist, CIRA, Colorado State U., Fort Collins

Visiting Research Scholar:

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|--------------------------------------|-------------------------|
| Dr. In-Yong Eom ^{*)} (2009) | PhD Texas Tech, Lubbock |
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^{*)} now Faculty at Catholic University of Daegu, Dept. of Chemistry, Gyeongsan, South Korea

Research Faculty:

Dr. Peter Percell^{*)} (2009-2010)
Dr. Xiangshang Li (2009-2021)

PhD University of California at Berkeley
PhD Tulane University

*) retired

Awards:

| | |
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| José Mojica (2006) | Provost's Undergraduate Research Scholarship (SURF), Summer 2006 |
| Bridget McEvoy-Day (2008) | Best Student Oral Presentation Award, 10 th Conf on Atmospheric Chemistry, Annual Meeting of the American Meteorological Society, New Orleans/LA, 20 - 24.01.2008 |
| Giovanna Croxatto (2009) | Provost's Undergraduate Research Scholarship (PURS), Spring semester 2009 |
| Giovanna Croxatto (2009) | Halliburton Excellence Award, May 2009 |
| Cari-Sue Wilmot (2010) | Rice-Houston Alliance for Graduate Education and the Professoriate (AGEP), Summer Research Stipend, Summer 2010 |
| Michael Leuchner, Bernhard Rappenglück (2010) | Paper "VOC Source-Receptor Relationships in Houston during TexAQSII, <i>Atmos. Environ.</i> , 44, 4056-4067, doi:10.1016/j.atmosenv.2009.02.029" among the most cited articles published in Atmospheric Environment in the time frame 2010-2011. |
| John Martinez (2012) | Alliance/Merck Science Hispanic Scholars Program |
| Gustavo Cuchiara (2012-2015) | PhD Scholarship from Brazilian national agency "Coordenação de Aperfeiçoamento de Pessoal de Nível Superior" ("Coordination of Improvement of Higher Education Personnel"; CAPES) |
| Cari-Sue Wilmot (2012) | Best oral presentation on Research Day of Department of Earth and Atmospheric Science |
| Gustavo Cuchiara (2012) | NSF support for participation in "Air Quality at the Interface: Mega Cities and Adjacent Agroecosystems", La Plata/Argentina August 8-16, 2012 |
| Teresa Spohn (2013) | "Ozonesonde/radiosonde launches in summer 2013", Summer Research 2013 in Qatar, supported by the Qatar Environment and Energy Research Institute |
| Jaymason Shelton (2015) | Best poster (beginning graduate students) on Research Day of Department of Earth and Atmospheric Science |
| Jaymason Shelton (2015) | University of Houston NSM Alumni Association Award |
| Jaymason Shelton (2016) | Outstanding Graduate Teaching Assistant Award / Dept. of Earth and Atmospheric Science |
| Vanessa Caicedo (2016) | Best oral presentation on Research Day of Department of Earth and Atmospheric Science - Atmospheric Scientist Students |
| Marco Esteban Avendaño (2016) | UH Summer Undergrad. Research Fellowship 2016 |

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| Mina Song (2016) | Provost's Undergraduate Research Scholarship (PURS), Fall 2016 |
| Olabosipo Osibanjo (2016-17) | UH Presidential Fellowship |
| Olabosipo Osibanjo (2017) | EAS Student Travel Award for Annual Meeting of the American Meteorological Society 2018 |
| Olabosipo Osibanjo (2018) | EAS Student Travel Award for Annual Meeting of the American Meteorological Society 2019 |
| Mateen Ahmad (2019-2024) | PhD Scholarship under the US-Pakistan Knowledge Corridor |
| Irfan Karim (2021-2026) | PhD Scholarship under the US-Pakistan Knowledge Corridor |
| Morshad Ahmed (2020) | Outstanding Academic Achievement Scholarship in Atmospheric Science |
| Madeline Statkewicz (2021) | William M. Lapenta NOAA Student Internship Program. |
| Madeline Statkewicz (2021) | Outstanding Undergraduate Teaching Assistant Award / Dept. of Earth and Atmospheric Science |
| Madeline Statkewicz (2021) | Sheriff-Lecture Best Presentation Award - Advanced PhD student |
| Madeline Statkewicz (2021) | Outstanding Academic Achievement Scholarship in Atmospheric Science |
| Morshad Ahmed (2021) | EAS Student Travel Award for AGU Fall Meeting 2021 |
| Morshad Ahmed (2021) | Outstanding Academic Achievement Award in Atmospheric Science |
| Tanzina Akther (2021) | EAS Student Travel Award for AGU Fall Meeting 2021 |
| Tanzina Akther (2021) | Outstanding Academic Achievement Award in Atmospheric Science |
| Morshad Ahmed (2022) | EAS Student Travel Award for iCACGP-IGAC2022 Conference 2022 |
| Tanzina Akther (2022) | EAS Student Travel Award for iCACGP-IGAC2022 Conference 2022 (partial) |
| Tanzina Akther (2022) | ICAG-Project Student Travel Award for the 15 th iCACGP Quadrennial Symposium/17 th IGAC Science Conference and iCACGP/IGAC Early Career Short Course, 8-15 September 2022, Manchester, UK |
| Tanzina Akther (2022) | Alumni Association Scholarship, College of Natural Science & Mathematics (NSM) |
| Tanzina Akther (since 2023) | Member of iCACGP-IGAC Early Career Scientific Steering Committee |
| Tanzina Akther (2023) | Outstanding Academic Achievement Award in Atmospheric Science |
| Morshad Ahmed (2023) | Outstanding Academic Achievement Scholarship in Atmospheric Science |
| Anshika FNU (2024) | EAS Department Research Grant |
| Alexa Olivi (2024) | UH Energy Scholars Program Stipend |
| Jahirul Alam (2024) | EAS Student Travel Award for AMS Conference 2024 |
| Irfan Karim (2024) | EAS Student Travel Award for AMS Conference 2024 |

Member on other MS Committees:

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|--------------------------|--|--|
| Monica Patel (2008) | Dpt. of Geosciences | <i>A Case Study on the Local Wind Circulation and Its Role on Ozone Concentrations in the Houston-Galveston Area</i> |
| James Flynn (2009) | Dpt. of Earth and Atmospheric Sciences | <i>Impacts of Clouds and Aerosols on Ozone Photochemistry in Southeast Texas</i> |
| Natalie Martin (2012) | Dpt. of Mechanical Engineering | <i>Accurate Modeling of the Neutral and Unstable Atmospheric Boundary Layer at Horns Rev using the k-ϵ Method in FLUENT 6.3</i> |

Member on other PhD Committees:

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|---------------------------|--|---|
| Oscar Correa (2006) | Dpt. of Civil and Environmental Engineering | <i>Atmospheric Concentrations, Deposition and Modeling of Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans</i> |
| Craig Clements† (2007) | Dpt. of Geosciences | <i>Experimental Studies of Fire-Atmosphere Interactions During Grass Fires</i> |
| Violeta Coarfa (2007) | Dpt. of Geosciences | <i>Air Quality Modeling of Aromatic Hydrocarbons in the Houston-Galveston Urban and Industrial Airshed</i> |
| Beata Czader (2007) | Dpt. of Geosciences | <i>Study of the Impact of VOCs on Ozone Formation under Houston-Galveston Atmospheric Conditions</i> |
| Fantine Ngan (2008) | Dpt. of Geosciences | <i>Classification of Weather Patterns and Improvement of Meteorological Inputs For Texas-II Air Quality Simulations</i> |
| Karl Pepple (2009) | Dpt. of Earth and Atmospheric Sciences | <i>Analysis of Mobile Emissions attributable to the University of Houston – For the Development of Strategic Sustainability Goals</i> |
| Dae-Gyun Lee (2009) | Dpt. of Earth and Atmospheric Sciences | <i>Retrospective Simulations of Ozone and Aerosols Utilizing the Improved Model Inputs from Global Model in-situ and Satellite Measurements</i> |
| Christine Haman (2011) | Dpt. of Earth and Atmospheric Sciences | <i>Impact of Synoptic Controls and Boundary Layer Processes on Ground-Level Ozone Evolution at an Urban Site</i> |
| Jingqian Wang (2012) | Dpt. of Earth and Atmospheric Sciences | <i>Investigation of the Tracer Gas Variability from Observations and Models</i> |
| Ankita Silva (2017) | Dept. of Pharmacological & Pharmaceutical Sciences | <i>Role of Oxidative Stress in Simulated Vehicle Exhaust-induced Behavioral & Cognitive Deficits in Rats</i> |
| Shuai Pan (2017) | Dpt. of Earth and Atmospheric Sciences | <i>Impact of Simulated Ozone by Improved Meteorological Factors such as Sea Surface Temperature, Cloud Fraction and sub-grid Clouds</i> |
| Alex Kotsakis (2017) | Dpt. of Earth and Atmospheric Sciences | <i>Investigating the Impact of Meteorology on Ozone Variability in Houston, Texas</i> |
| Amir Sourì (2018) | Dpt. of Earth and Atmospheric Sciences | <i>Data Assimilation for Tropospheric Chemistry Modeling using Airborne and Geo-stationary Remote Sensing Sensors</i> |
| Muqing Jin (2019) | Dpt. of Physics | <i>Anisotropic Flow Fluctuations in very central Pb-Pb $\sqrt{s_{NN}} = 2.76$ TeV Collisions</i> |

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| Sayed Mekhaimr (2019) | Astronomy and Meteorology Department, Faculty of Science / Cairo University, Egypt | <i>Atmospheric Dispersion Modeling by using Ensemble Methods: Application to CTBT's Radionuclide Verification System</i> |
| Camila Kochi (2020) | Dept. of Pharmacological & Pharmaceutical Sciences | <i>Stress Susceptibility and Vehicle Exhaust Pollution</i> |
| Alqamah Sayeed (2022) | Dpt. of Earth and Atmospheric Sciences | <i>Integrating Deep Neural Network with Numerical Models to Have Better Weather and Air Quality Forecast Both Spatially and Temporally</i> |
| Bavand Sadhegi (2022) | Dpt. of Earth and Atmospheric Sciences | <i>Characterization of Atmospheric Pollutants over Industrial Areas: Source Apportionment and Transport Modeling</i> |
| Arman Pouyaei (2022) | Dpt. of Earth and Atmospheric Sciences | <i>Development and Implementation of Numerical Models for Quantitative PM study, Hemispheric Transport of Air Pollutants and AI-based Data Assimilation</i> |
| Masoud Ghahremanloo (2023) | Dpt. of Earth and Atmospheric Sciences | <i>Machine Learning Estimation of Daily Surface Concentrations of PM_{2.5}, NO₂, and MD_{A8} Ozone at High Spatiotemporal Resolutions</i> |
| Mahmoudreza Momeni (2024) | Dpt. of Earth and Atmospheric Sciences | <i>Development of a Python-based data Assimilation Framework focusing on Four-Dimensional Variational (4D-Var) Approach to refine Air Pollutant Emissions through Observation Data</i> |
| Arash Kashfi Yeganeh (TBD) | Dpt. of Earth and Atmospheric Sciences | <i>Improved Understanding on Source Contributions Using Adjoint Technique and Inverse Modeling</i> |
| Shihab Ahmad Shahriar (TBD) | Dpt. of Earth and Atmospheric Sciences | <i>Advancing Wildfire and Air Quality Analytics: Forecasting PM_{2.5} Concentrations, Fire Weather Index, and Health Impacts in CONUS with Deep Learning and Climate Modeling</i> |
| Seyedeh Reyhaneh Shams (TBD) | Dpt. of Earth and Atmospheric Sciences | TBD |
| Mahsa Payami Shabestar (TBD) | Dpt. of Earth and Atmospheric Sciences | TBD |
| Sagun Gopal Kayastha (TBD) | Dpt. of Earth and Atmospheric Sciences | TBD |
| Nima Khorshidian (TBD) | Dpt. of Earth and Atmospheric Sciences | TBD |

† since Fall 2007 Faculty at San José State University, Meteorology Department, San José/CA

Service and Affiliations

Member in Professional Organizations:

Deutsche Meteorologische Gesellschaft (DMG; 1992) - German Meteorological Society
American Meteorological Society (AMS; 1994)
Deutsche Physikalische Gesellschaft (DPG; 1996) - German Physical Society
American Chemical Society (ACS; 1999)
American Geophysical Union (AGU; 2001)

Manuscript Reviews (445; 53 journals)

| | |
|---|---|
| Aerosol and Air Quality Research | Environmental Pollution |
| AIMS Environmental Science | Environment, Science & Pollution Research |
| Ain Shams Engineering Journal | Environmental Science & Technology |
| Air Quality, Atmosphere and Health | Fuel |
| Analytical Chemistry | Geophysical Research Letters |
| Annales Geophysicae | Geoscientific Model Development |
| Applied Sciences | International Journal of Atmospheric Sciences |
| Arabian Journal of Geosciences | International Journal of Environmental Analytical Chemistry |
| Asia-Pacific Journal of Atmospheric Science | International Scholarly Research Notices |
| Atmósfera | ISRN Atmospheric Sciences |
| Atmosphere | Journal of Arid Land |
| Atmospheric Environment | Journal of Applied Meteorology |
| Atmospheric Environment X | Journal of Atmospheric and Solar-Terrestrial Physics |
| Atmospheric Chemistry and Physics | Journal of Atmospheric Chemistry |
| Atmospheric Measurement Techniques | Journal of Environmental Management |
| Atmospheric Pollution Research | Journal of Environmental Science |
| Atmospheric Research | Journal of Geophysical Research |
| Boreal Environment Research | Journal of Hazardous Materials |
| British Journal of App. Sci. & Techn. | Journal of King Saud University - Science |
| Chemosphere | Journal of the Air & Waste Management Association |
| Critical Reviews in Environ Sci & Technol. | Meteorologische Zeitschrift |
| Elementa | Physical Geography |
| Energy | PLOS One |
| Environmental Chemistry | Proceedings of the National Academy of Sciences (PNAS) |
| Environmental Health Insights | Remote Sensing |
| Environmental Modeling and Assessment | Science of the Total Environment |
| Environmental Monitoring and Assessment | |

Book Review

Hakim G., and Patoux J. (2016): Weather: A Concise Introduction

Book Proposal review:

Holloway T., and Levy II, Hiram (2018): Understanding Air Quality: Science and Policy
Dulac F. and Sauvage S. (2020): Atmospheric Chemistry and its Impacts in the Mediterranean Region

Proposal Reviews

National Science Foundation (NSF); US Environmental Protection Agency (US EPA); NOAA - Atmospheric Chemistry, Carbon Cycle, & Climate (AC4); Natural Environment Research Council (NERC) UK; L'Agence Nationale de la Recherche (ANR) - French National Research Agency; European Science Foundation (ESF); Chilean National Fund for Scientific and Technological Development (FONDECYT); Research Grants Council (RGC) of Hong Kong; Der Wissenschaftsfond (FWF) - Austrian Science Fund, Deutsche Forschungsgemeinschaft (DFG) - German Research Foundation

Other Reviews

Health Effects Institute (HEI); John Simon Guggenheim Memorial Foundation; NASA Postdoctoral Program (NPP) and Ralph E. Powe Junior Faculty Awards on behalf of Oak Ridge Associated Universities (ORAU); Technology Foundation STW, Netherlands; Irish Research Council, Ireland

Member

Science Advisory Group for Reactive Gases of the World Meteorological Organization (WMO).

Houston Advanced Research Center (HARC)-Science Advisory Committee (SAC) on Emergency Response and Preparedness (since 2021)

Peer Reviewed Publications

(h-index: 49; i10-index: 92; citation: 6076)

*Graduate student, **Undergraduate student, +Postdoc, ++Research Scientist (advised by myself)

- 1) Chen T., Gilman J., Kim S.-W., Lefer B., Washenfelder R., Young C.J., **Rappenglueck B.**, Stevens P., Veres P., Xue L., de Gouw L. (2024): Modelling the Impacts of Volatile Chemical Product Emissions on Atmospheric Photochemistry and Ozone Formation in Los Angeles, *J. Geophys. Res.*, submitted
- 2) Soneye-Arogundade*O.O., **Rappenglueck B.** (2024): The Variation of Atmospheric Turbidity over a Tropical Site in Nigeria and its Relationship to Climate Drivers, *Atmosphere*, under revision
- 3) Alam*J.M., **Rappenglueck B.**, Retama A., Rivera-Hernández O. (2024): Investigating the Complexities of VOC-Sources in Mexico City in the years 2016-2022, *Atmosphere*, 15, 179. <https://doi.org/10.3390/atmos15020179>
- 4) Ahmed*M., **Rappenglueck B.**, Ganranoo L., Dasgupta P.K. (2023): Source apportionment of gaseous nitrophenols and their contribution to HONO formation in an urban area, *Chemosphere*, 338, 139499, doi: 10.1016/j.chemosphere.2023.139499
- 5) Soneye-Arogundade*O.O., **Rappenglueck B.** (2023): Estimation of Diffuse Solar Radiation Models for a Tropical Site in Nigeria, *Pure Appl. Geophys.*, doi: 10.1007/s00024-023-03330-x
- 6) Statkewicz*M.D., **Rappenglueck B.** (2023): A Comparative Analysis of the Sea Breeze on the Texas Gulf Coast and its Impact on Precipitation, *Urban Clim.*, doi: 10.1016/j.uclim.2023.101568
- 7) Karim*I., **Rappenglueck B.** (2023): Impact of Covid-19 lockdown regulations on PM_{2.5} and trace gases (NO₂, SO₂, CH₄, HCHO, C₂H₂O₂, and O₃) over Lahore, Pakistan, *Atmos. Env.*, 119746, doi: 10.1016/j.atmosenv.2023.119746
- 8) Akther*T., **Rappenglueck B.**, Osibanjo*O., Retama A., Rivera-Hernández O. (2023): Ozone precursors and boundary layer meteorology before and during a severe ozone episode in Mexico City. *Chemosphere*, 137978, DOI: 10.1016/j.chemosphere.2023.13797
- 9) Ahmad*M., **Rappenglueck B.**, Osibanjo*O.O., Retama A. (2022): A Machine Learning Approach to investigate the Build-up of Surface Ozone in Mexico-City, *Journal of Cleaner Production*, DOI: 10.1016/j.jclepro.2022.134638
- 10) Sadeghi*B., Pouyaei*A., Choi Y., **Rappenglueck B.** (2022): Influence of seasonal variability on source characteristics of VOCs at Houston industrial area, *Atmos. Env.*, 277, DOI: 10.1016/j.atmosenv.2022.119077
- 11) Osibanjo*O.O., **Rappenglueck B.**, Ahmad*M., Jaimes-Palomera M., Rivera-Hernández O., Prieto-González R., Retama A. (2022): Intercomparison of Planetary Boundary Layer Height in Mexico City as retrieved by Microwave Radiometer, Micro-Pulse LIDAR and Radiosondes, *Atmospheric Research*, 271, 106088, DOI: 10.1016/j.atmosres.2022.106088
- 12) Ahmed*M., **Rappenglueck B.**, Das S., Chellam S. (2021): Source Apportionment of Volatile Organic Compounds, CO, SO₂ and Trace Metals in a Complex Urban Atmosphere, *Environ. Adv.*, 6, DOI: 10.1016/j.envadv.2021.100127
- 13) Statkewicz*M.D., Talbot R., **Rappenglueck B.** (2021): Changes in Precipitation Patterns in Houston, Texas, *Environ. Adv.*, 5, DOI: 10.1016/j.envadv.2021.100073
- 14) Hansen R.F., Griffith S.M., Dusanter S., Gilman J.B., Graus M., Kuster W.C., Veres P., de Gouw J.A., Warneke C., Washenfelder R.A., Young C.J., Brown S.S., Alvarez S.L., Flynn J.H., Grossberg N.E., Lefer B., **Rappenglueck B.**, Stevens P.S. (2021): Measurements of Total OH Reactivity during CalNex-LA, *J. Geophys. Res.*, 126, DOI: 10.1029/2020JD032988
- 15) Velasco E., Retama A., Zavala M., Guevara M., **Rappenglueck B.**, Molina L.T. (2021): Intensive field campaigns as a means for improving scientific knowledge to address urban air pollution, *Atmos. Environ.*, 246, DOI: 10.1016/j.atmosenv.2020.118094
- 16) Osibanjo*O.O., **Rappenglueck B.**, Retama A. (2021): Anatomy of the March 2016 Severe Ozone Smog Episode in Mexico-City, *Atmos. Env.*, 244, DOI: 10.1016/j.atmosenv.2020.117945
- 17) Nault B. A., Jo D.S., McDonald B.C., Campuzano-Jost P., Day D.A., Hu W., Schroder J.C., Allan J., Blake D.R., Canagaratna M.R., Coe H., Coggon M.M., DeCarlo P.F., Diskin G.S., Flocke F., Fried A., Gilman J.B., Gkatzelis G., Hamilton J.F., Hainsco T.F., Hayes P.L., Henze D.K., Hodzic A., Hopkins J., Hu M., Huey L.G., Jobson B.T., Kuster W.C., Lewis A., Li M., Liao J., Omar Nawaz M., Pollack I.B., Peischl J., **Rappenglueck B.**, Reeves C.E., Richter D., Roberts J.M., Ryerson T.B., Shao M., Sommers J.M., Walega J., Warneke C., Weibring P., Wolfe G.M., Young D.E., Yuan B., Zhang Q., de Gouw J.A., Jimenez J.L. (2021): Anthropogenic Secondary Organic Aerosols Contribute Substantially to Air Pollution Mortality, *Atmos. Chem. Phys.*, 21, 11201–11224, 2021, DOI: 10.5194/acp-21-11201-2021
- 18) Heald C.L., de Gouw J., Goldstein A.H., Guenther A.B., Hayes P.L., Hu W., Isaacman-Wertz G., Jimenez J.L., Keutsch F.N., Koss A.R., Misztal P.K., **Rappenglueck B.**, Roberts J.M., Stevens P.S., Washenfelder R.A., Warneke C., Young C.J. (2020): Contrasting Reactive Organic Carbon Observations in the Southeast United States (SOAS) and Southern California (CalNex), *Environ. Sci. Technol.*, 54, 23, 14923-14935, DOI: 10.1021/acs.est.0c05027
- 19) Reyes F., Vazques Y., Gramsch E., Oyola P., **Rappenglueck B.**, Rubio M.A. (2019): Photooxidation of emissions from firewood and pellet combustion using a photochemical chamber, *Atmosphere*, 10, 575; doi:10.3390/atmos10100575
- 20) Caicedo*V., **Rappenglueck B.**, Cuchiara*G., Flynn J., Ferrare R., Scarino A.J., Berkoff T., Senff C., Langford A., Lefer B. (2019): Bay and sea-breeze circulations impacts on the planetary boundary layer and air quality from an observed and modeled DISCOVER-AQ Texas case study, *J. Geophys. Res.*, 124, DOI: 10.1029/2019JD030523
- 21) Cai C., Avise J., Kaduwela A., DaMassa J., Warneke C., Gilman J., Kuster B., de Gouw J., Volkamer R., Stevens P., Lefer B., Holloway J.S., Pollack I., Ryerson T., Atlas E., Blake D., **Rappenglueck B.**, Brown S.S., Dube W.P. (2019): Simulating the weekly cycle of NO_x-VOC-HO_x-O₃ photochemical system in the South Coast of California during CalNex-2010 Campaign, *J. Geophys. Res.*, 124, DOI: 10.1029/2018JD029859
- 22) Cuchiara*G.C., **Rappenglueck B.** (2019): Simulating the influence of convective decay parameterization for a case study in Houston, TX, *Atmos. Env.*, 204, 68-77, <https://doi.org/10.1016/j.atmosenv.2019.02.016>

- 23) Li++X., **Rappenglück B.** (2018): A Study of Model Nighttime Ozone Bias in Air Quality Modeling, *Atmos. Env.*, 195, 210-228, doi: 10.1016/j.atmosenv.2018.09.046
- 24) Cuchiara*G.C., **Rappenglück B.** (2018): Performance analysis of WRF and LES in describing the evolution and structure of the Planetary Boundary Layer, *Environ. Fluid. Mech.*, 18, 1257-1273, <https://doi.org/10.1007/s10652-018-9597-5>
- 25) De Gouw J.A., Gilman J.B., Kim S.-W., Alvarez S.L., Dusanter S., Graus M., Griffith S.M., Isaacman-Van Wertz G., Kuster W.C., Lefer B.L., Lerner B.M., McDonald B.C., **Rappenglueck B.**, Roberts J.M., Stevens P.S., Stutz J., Veres P.R., Volkamer R., Warneke C., Washenfelder R.A. (2018): Chemistry of Volatile Organic Compounds in the Los Angeles Basin: Formation of Oxygenated Compounds and Determination of Emission Ratios, *J. Geophys. Res.*, 123, DOI: 10.1002/2017JD027976
- 26) Cuchiara*G.C., **Rappenglück B.**, Rubio A.M., Lissi E., Gramsch E., Garreaud R.D. (2017): Modeling Study of Biomass Burning Plumes and their Impact on Urban Air Quality; A Case Study of Santiago de Chile, *Atmos. Env.*, 166, 79-19, doi: 10.1016/j.atmosenv.2017.07.002
- 27) Zhu L., Jacob D.J., Keutsch F.N., Mickley L.J., Scheffe R., Strum M., González Abad G., Chance K., Yang K., **Rappenglück B.**, Millet D.B., Baasandorj M., Jaeglé L., Shah V. (2017): Formaldehyde (HCHO) as a Hazardous Air Pollutant: Mapping surface air concentrations from satellite and inferring cancer risks in the United States, *Environ. Sci. Technol.*, 51, 5650-5657, doi: 10.1021/acs.est.7b01356
- 28) Cuchiara*G.C., **Rappenglück B.** (2017): Single-Column Model and Large Eddy Simulation of the Evening Transition in the Planetary Boundary Layer, *Environ. Fluid. Mech.*, 17, 777-798, doi:10.1007/s10652-017-9518-z
- 29) Caicedo*V., **Rappenglueck B.**, Lefer B., Morris G., Toledo D., Delgado R. (2017): Comparison of aerosol LIDAR retrieval methods for boundary layer height detection using ceilometer backscatter data, *Atmos. Meas. Tech.*, doi:10.5194/amt-10-1609-2017
- 30) Griffith S.M., Hansen R.F., Dusanter S., Michoud V., Gilman J.B., Kuster W.C., Veres P.R., Graus M., de Gouw J.A., Roberts J., Young C., Washenfelder R., Brown S.S., Thalman R., Waxman E., Volkamer R., Tsai C., Stutz J.S., Flynn J.H., Grossberg N., Lefer B., Alvarez S.L., **Rappenglueck B.**, Mielke L.H., Osthoff H.D., Stevens P.S. (2016): Measurements of Hydroxyl and Hydroperoxy Radicals during CalNex-LA: Model Comparisons and Radical Budgets, *J. Geophys. Res.*, 121, doi:10.1002/2015JD024358
- 31) Huntrieser H., Lichtenstern M., Scheibe M., Aufmhoff H., Schlager H., Pucik T., Minikin A., Weinzierl B., Heimerl K., Fütterer D., **Rappenglück B.**, Ackermann*L., Pickering K.E., Cummings K.A., Biggerstaff M., Betten D.P., Honomichl S., Barth M.C. (2016): On the origin of pronounced O₃ gradients in the thunderstorm outflow region during DC3, *J. Geophys. Res.*, 121, doi:10.1002/2015JD024279
- 32) **Rappenglück B. (*)**, Lubertino G. (2015) Letter to the Editor on Wormhoudt, J.; Wood, E.; Knighton, W.; Kolb, C.; Herndon, S.; Olaguer, E. 2015. Vehicle emissions of radical precursors and related species observed in the 2009 SHARP campaign; J. Air Waste Manage. Assoc. 65: 699–706, *J. Air Waste Man. Assoc.*, 65:7, 767-770, DOI: 10.1080/10962247.2015.1053358
***) corresponding author**
- 33) Hayes P.L., Carlton A.G., Baker K.R., Ahmadov R., Washenfelder R.A., Alvarez++S., **Rappenglück B.**, Gilman J.B., Kuster W.C., de Gouw J.A., Zotter P., Prévôt A.S.H., Szidat S., Kleindienst T.E., Offenberg J.H., Ma P.K., Jimenez J.L. (2015): Modeling the formation and aging of secondary organic aerosols during CalNex 2010, *Atmos. Chem. Phys.*, 15, 5773–5801, doi:10.5194/acp-15-5773-2015
- 34) Shalaby++A., **Rappenglueck B.**, Eltahir E.A.B. (2015): The Climatology of Dust Aerosol over the Arabian Peninsula, *Atmos. Chem. Phys. Discuss.*, 15, 1523-1571, doi:10.5194/acpd-15-1523-2015
- 35) Spohn*T.K., **Rappenglück B. (*)** (2015): Tracking potential sources of peak ozone concentrations in the upper troposphere over the Arabian Gulf region, *Atmos. Env.*, 101, 257-269, <http://dx.doi.org/10.1016/j.atmosenv.2014.11.026>
***) corresponding author**
- 36) Czader+B., **Rappenglück B.** (2015): Modeling of 1,3-butadiene in urban and industrial areas, *Atmos. Env.*, 102, 30-42, <http://dx.doi.org/10.1016/j.atmosenv.2014.11.039>
- 37) Yuan B., Veres P.R., Warneke C., Roberts J.M., Gilman J.B., Koss A., Edwards P.M., Graus M., Kuster W.C., Li S.-M., Wild R.J., Brown S.S., Dubé W.P., Lerner B.M., Williams E.J., Johnson J., Quinn P.K., Bates T.S., Lefer B., Hayes P., Jimenez J.L., Weber R.J., Zamora R., Ervens B., Millet D., **Rappenglück B.**, de Gouw J.A. (2015): Investigation of secondary formation of formic acid: urban environment vs. oil and gas producing region, *Atmos. Chem. Phys.*, 15, 1975-1993, doi:10.5194/acp-15-1975-2015
- 38) Wilmot*C.-S. M., **Rappenglück B. (*)**, Li++X., Cuchiara*G. (2014): MM5 v3.6.1 and WRF v3.5.1 model comparison of standard and surface energy variables in the development of the planetary boundary layer, *Geosci. Model Dev.*, 7, 2693-2707, doi:10.5194/gmd-7-2693-2014
***) corresponding author**
- 39) Li++X., **Rappenglück B. (*)** (2014): A WRF-CMAQ Study on Spring Time Vertical Ozone Structure in Southeast Texas, *Atmos. Env.*, 97, 363-385, <http://dx.doi.org/10.1016/j.atmosenv.2014.08.036>
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- 2) Karim I., **Rappenglück B.** (2024): Air Quality Changes in Lahore, One of the Most Polluted City Worldwide During COVID 19 Lockdowns, *EGU Joint Assembly*, Vienna/Austria, 14.-19.04.2024.
- 3) Ahmed M., **Rappenglück B.**, Ganranoo L., Dasgupta P.K. (2024): Gaseous Nitrophenols sources and their contribution to HONO formation in an urban area, *EGU Joint Assembly*, Vienna/Austria, 14.-19.04.2024.
- 4) Akther T., **Rappenglück B.**, Nelson B., Mayhew A., Retama A., Rivera-Hernández O. (2024): Box-Modelling of O₃ and its sensitivity towards VOCs and NO_x in Mexico City under altered emission conditions, *EGU Joint Assembly*, Vienna/Austria, 14.-19.04.2024.
- 5) Soneye-Arogundade O.O., **Rappenglück B.** (2024): Estimation of Diffuse Solar Radiation Models for a Tropical Site in Nigeria, *EGU Joint Assembly*, Vienna/Austria, 14.-19.04.2024.
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- 9) **Rappenglück B.**, Ahmed M., Akther T., Chellam S., Das S., Osibanjo O., Retama A., Rivera-Hernández O. (2023): Source Apportionment of Commixtures of VOCs and Inorganic Compounds; Insights from Case Studies in Houston and Mexico City, *The International Expert Workshop on Volatile Organic Compounds 2023*, Hong Kong, China, 28.11.2023.
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- 11) Akther T., **Rappenglück B.**, S. Osibanjo O., Retama A., Rivera-Hernández O. (2022) Ozone precursors And Boundary Layer Meteorology Before and During a Severe Ozone Episode in Mexico City, *iCACGP-IGAC Joint International Atmospheric Chemistry Conference*, 11.-15.09.2022, Manchester/UK
- 12) Osibanjo O.O., **Rappenglück B.**, Velasco E., Retama A. (2022): Climatology of the Planetary Boundary Layer Height Variation and its Relation to Ozone Exceedances, *102th Annual Meeting of the American Meteorological Society*, 23.-27.01.2022, Houston TX/USA
- 13) Statkewicz M.D., Talbot R., **Rappenglück B.** (2022): Changes in Precipitation Patterns in Houston, Texas, *102th Annual Meeting of the American Meteorological Society*, 23.-27.01.2022, Houston TX/USA
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- 221) Forkel R., Smiatek G., Hernandez F., Iniestra R., **Rappenglück B.**, Steinbrecher R. (2004): Numerical Simulations of Ozone Level Scenarios for Mexico City, presented at the *6th Conference on Atmospheric Chemistry: Air Quality in Megacities, 84th Annual Meeting of the American Meteorological Society*, Seattle WA/USA, 11 - 15.01.2004
- 222) **Rappenglück B.**, Schmitz R., Bauerfeind M., Cereceda-Balic F., von Baer D., Silva Y., Rubio M.A., Lissi E., Oyola P. (2004): An Urban Photochemistry Study in the Metropolitan Region of Santiago de Chile, presented at the *6th Conference on Atmospheric Chemistry: Air Quality in Megacities, 84th Annual Meeting of the American Meteorological Society*, Seattle WA/USA, 11 - 15.01.2004
- 223) Steinbrecher R., **Rappenglück B.**, Steigner D., Hansel A., Graus M., Lindinger Ch. (2003): Fluxes of Primary and Secondary Biogenic Volatile Organic Compounds (BVOC) During the BEWA Field Experiments, presented at the *American Geophysical Union, Fall Meeting*, San Francisco CA/USA, 8.-12.12.2003
- 224) Forkel R., **Rappenglück B.**, Steinbrecher R. (2003): Simulation of BVOC Fluxes and Chemical Transformations with a One-dimensional Canopy Chemistry Model for the BEWA Campaigns, presented at the *American Geophysical Union, Fall Meeting*, San Francisco CA/USA, 8.-12.12.2003
- 225) **Rappenglück B.** (2003): VOC Measurements: Quality Control, *invited lecture* at the *5th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 03.07.2003

- 226) **Rappenglück B.** (2003): VOC Measurements: Sampling, *invited lecture at the 5th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 03.07.2003
- 227) Steigner D., Steinbrecher R., **Rappenglück B.**, Gasche R., Hansel A., Graus M., Lindinger Ch. (2003): Emissions of selected VOC from forests: first results on measurements needed for improvement and validation of emission models, presented at the *EGS-AGU-EUG Joint Assembly*, Nizza/Frankreich, 06. - 11.04.2003
- 228) **Rappenglück B.** and the BEWA2000 Team (BEWA2000 Team: Steinbrecher R., Barnes I., Forkel R., Giersch Ch., Hampp R., Herrmann H., Klemm O., Kreuzwieser J., Mohnen V., Moortgat G., Müller K., Rappenglück B., Rennenberg H., Schnitzler J.-P., Smiatek G., Weitz A., Zimmer W.) (2003): Regional biogenic emissions of reactive volatile organic compounds (BVOC) from forests: first results on process studies, modelling and validation experiments (BEWA2000), presented at the *EGS-AGU-EUG Joint Assembly*, Nizza/Frankreich, 06. - 11.04.2003
- 229) Steinbrecher R., Junkermann W., Zuurbier R., Steigner D., **Rappenglück B.**, Burger J., Schaab G. (2003): Biodiversity of the Kakamega Forest in Kenya and the impact of increasing pressure through population: A new technique for assessing area averaged change in trace gas exchange between ecosystems and the atmosphere, presented at the *16th Annual Meeting of the Society for Ecology of the Tropics (GTÖ)*, Rostock/Germany, 19.-22.02.2003
- 230) **Rappenglück B.** (2002): World Calibration Center for VOC (WCC-VOC), a new Facility for the GAW-Programme, presented at the *American Geophysical Union, Fall Meeting*, San Francisco CA/USA, 5.-10.12.2002
- 231) Forster C., Stohl A., Huntrieser H., Cooper O., Eckhardt S., James P., Heland J., Mannstein H., Schlager H., **Rappenglück B.**, Junkermann W., Arnold F., Aufmhoff H., Wilhelm S., Spichtinger N., Wernli H. (2002): A chemical characterization of North American pollutant plumes over Europe and a 15-year climatology of warm conveyor belt transport, *EMEP/German/US EPA Workshop I, Hemispheric Air Pollution*, Bad Breisig/Germany, 07.-09.10.2002
- 232) Steigner D., Steinbrecher R., **Rappenglück B.**, Gasche R., Hansel A., Graus M., Lindinger Ch. (2002): Emissions of selected VOC from forests: First results on measurements needed for improvement and validation of emission models, presented at the *AFO2000-Statusseminar*, Schliersee/Germany, 07.-09.10.2002
- 233) **Rappenglück B.**, Hofmann D., Steigner D., Plewka A., Steinbrecher R., Herrmann H. (2002): Investigations on the Atmospheric Degradation of Biogenic VOCs: Determination of Typical Oxidation Products in Forest Ecosystems, presented at the *AFO2000-Statusseminar*, Schliersee/Germany, 7.-9.10.2002
- 234) Stohl A., Huntrieser H., Cooper O., Eckhardt S., Forster C., James P., Heland J., Mannstein H., Schlager H., Junkermann W., **Rappenglück B.**, Arnold F., Aufmhoff H., Wilhelm S. (2002): A chemical characterisation of North American pollutant plumes over Europe and a 15-year climatology of global warm conveyor belt transport, presented at the *10th Scientific Conference of the International Association of Meteorology and Atmospheric Sciences (LAMAS), Commission for Atmospheric Chemistry and Global Pollution (CACGP), 7th Scientific Conference of the International Global Atmospheric Chemistry Project (IGAC)*, Hersonissos-Heraklion/Greece, 18.-25.09.2002
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- 236) Steinbrecher R., Barnes I., Forkel R., Giersch Ch., Hansel A., Hampp R., Herrmann H., Klemm O., Kreuzwieser J., Mohnen V., Moortgat G., Rennenberg H., **Rappenglück B.**, Rennenberg H., Schnitzler J.-P., Smiatek G., Weitz A., Zimmer W. (2002): Regional biogenic emissions of reactive volatile organic compounds from forests (BEWA2000): First results from model, process, and validation studies based on laboratory and field conditions (in German), presented at the *BMBF-Tagung "Bedeutung der Wechselwirkungen Biosphäre/Atmosphäre für die Nachhaltige Nutzung der Biosphäre und den Klimaschutz"*, Bonn/Germany, 16.09.-17.09.2002
- 237) Steinbrecher R., Barnes I., Forkel R., Giersch Ch., Hampp R., Herrmann H., Klemm O., Kreuzwieser J., Mohnen V., Moortgat G., Müller K., **Rappenglück B.**, Rennenberg H., Schnitzler J.-P., Smiatek G., Weitz A., Zimmer W. (2002): Regional biogenic emissions of reactive volatile organic compounds (BVOC) from forests: Process studies, modeling and validation experiments (BEWA2000), presented at the *Gordon Research Conferences "Biogenic Hydrocarbons and the Atmosphere"*, Oxford/UK, 01.-06.09.2002
- 238) **Rappenglück B.** (2002): World Calibration Center for VOC (WCC-VOC), *invited lecture at the 3th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 24.06.2002
- 239) **Rappenglück B.** (2002): VOC: Quality assurance, *invited lecture at the 3th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 19.06.2002
- 240) **Rappenglück B.** (2002): Flask sampling, *invited lecture at the 3th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 19.06.2002
- 241) **Rappenglück B.**, Gilles U. (2002): VOC: Sampling and measurement techniques, *invited lecture at the 3th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 19.06.2002
- 242) **Rappenglück B.** (2002): VOC: Chemistry and emissions, *invited lecture at the 3th GAWTEC Course organized by the Global Atmosphere Watch – Training and Education Center of the WMO*, Umweltforschungsstation Schneefernerhaus – Zugspitze, Germany, 19.06.2002
- 243) **Rappenglück B.** (2002): World Calibration Center for VOC (WCC-VOC), presented at *RIGA 2002 - GAW Workshop for WMO RA VI (Europe) on Status and Trends of Global Atmosphere Watch*, Riga/Latvia, 27.-30.05.2002

- 244) **Rappenglück B.**, Klauer M., Hauff K., Pfichner A., Steinbrecher R. (2002): A novel Relaxed-Eddy-Accumulation (REA) technique for the determination of BVOC-fluxes, presented at the *25th Conference on Agricultural and Forest Meteorology, 12th Joint Conference on the Applications of Air Pollution Meteorology with A&WMA, 4th Symposium on the Urban Environment*, Norfolk VA/USA, 20.-24.05.2002
- 245) Steinbrecher R., Barnes I., Forkel R., Giersch Ch., Hampp R., Herrmann H., Klemm O., Kreuzwieser J., Mohnen V., Moortgat G., Müller K., **Rappenglück B.**, Rennenberg H., Schnitzler J.-P., Seiler W., Smiatek G., Weitz A., Zimmer W. (2002): Regional Biogenic Emissions of Reactive Volatile Organic Compounds (BVOC) from Forests: Process Studies, Modelling and Validation Experiments (BEWA2000), presented at *EUROTRAC Symp. '02*, Garmisch-Partenkirchen/Germany, 11.-15.03.2002
- 246) Steinbrecher R., Junkermann W., **Rappenglück B.**, Walsh M., Awiti A. (2001): Meteorology and surface fluxes of trace gases at the Kakamega Forest, Kenya: methods and first results, presented at the *BIOLOG Status Seminar*, Bonn/Germany, 6./7.12.2001
- 247) **Rappenglück B.**, Fabian P., Kourtidis K., Zerefos C., Mihalopoulos N., Melas D., Schmitt R., Rapsomanikis S. (2001): Long range transport and photochemistry in the Eastern Mediterranean (in German), *Deutsch – Österreichisch – Schweizerische – Meteorologen - Tagung (Meeting of the German, Austrian and Swiss Meteorologists)*, Vienna/Austria, 18.-21.09.2001
- 248) **Rappenglück B.**, Forster C., Jakobi G., Pesch M (2001): Analysis of enhanced ozone and PAN concentrations in the nighttime boundary layer over the urban area of Berlin (in German), *Deutsch – Österreichisch – Schweizerische – Meteorologen - Tagung (Meeting of the German, Austrian and Swiss Meteorologists)*, Vienna/Austria, 18.-21.09.2001
- 249) Spanier U., **Rappenglück B.**, Werner H., Fabian P. (2001): Investigations of ethylene emissions in a forest (in German), presented at the *Deutsch – Österreichisch – Schweizerische – Meteorologen – Tagung (Meeting of the German, Austrian and Swiss Meteorologists)*, Vienna/Austria, 18.-21.09.2001
- 250) **Rappenglück B.**, Jakobi G., Fabian P., Pesch M., Reimer E. (2001): Enhanced levels of PAN and ozone in the nighttime boundary layer over Berlin, Germany, presented at the *Millennium Symposium on Atmospheric Chemistry, 81st Annual Meeting of the American Meteorological Society*, 14 - 19.01.2001, Albuquerque NM/USA
- 251) **Rappenglück B.**, Melas D., Fabian P. (2001): Long range transport of trace gases observed on Crete, Greece, presented at the *Millennium Symposium on Atmospheric Chemistry, 81st Annual Meeting of the American Meteorological Society*, 14 - 19.01.2001, Albuquerque NM/USA
- 252) Fabian P., **Rappenglück B.**, Stohl A., Werner H., Schlager H., Stock P., Berresheim H., Elste T., Kaminski U., Koepke P., Reuder J. (2000): Boundary layer photochemistry under total solar eclipse conditions, presented at the *Quadrennial Ozone Symposium*, Sapporo/Japan, 03. - 08.07.2000
- 253) **Rappenglück B.**, Oyola P., Olaeta I., Schmitt R., Fabian P. (2000): Photochemical smog in Santiago de Chile, presented at the *Quadrennial Ozone Symposium*, Sapporo/Japan, 03. - 08.07.2000
- 254) **Rappenglück B.**, Jakobi G., Fabian P. (2000): Photochemical processes in the urban plume of Berlin, Germany, presented at the *Quadrennial Ozone Symposium*, Sapporo/Japan, 03. - 08.07.2000
- 255) **Rappenglück B.**, Jakobi G., Pesch M. (2000): Air Quality Studies in the Conurbation of Berlin, presented at the *TFS-Workshop*, Bonn/Germany, 28. - 29.06.2000
- 256) Konrad S., Pätz H.W., Hofzumahaus A., Holland F., Rohrer F., Bäumle M., Kurtenbach R., **Rappenglück B.**, Volz-Thomas A. (2000): Comparison of OH Radical estimates from VOC decay in the Berlin Plume with direct measurements by LIF, presented at the *European Geophysical Society (EGS) XXV General Assembly*, Nice/France, 25. - 29.04.2000
- 257) **Rappenglück B.**, Fabian P. (2000): Observations of Hydrocarbons in the Urban Plume of Munich, presented at the *European Geophysical Society (EGS) XXV General Assembly*, Nice/France, 25. - 29.04.2000
- 258) **Rappenglück B.**, Jakobi G., Fabian P. (2000): Comparison of O₃ and PAN measurements during BERLIOZ, presented at the *European Geophysical Society (EGS) XXV General Assembly*, Nice/France, 25. - 29.04.2000
- 259) **Rappenglück B.**, Reitmayer H., Fabian P. (2000): On the use of manned H₂ gas ballooning in boundary layer studies (in German), presented at *METTOOLS IV - Fourth Conference on Environmental Meteorology of the German Meteorological Society*, Universität-Stuttgart, 03-05.04.2000, 58-60
- 260) Wieprecht W., Möller D., Kalaß D., Acker K., Slemr F., Lörzer J., Kurtenbach R., **Rappenglück B.**, Lohrmann B., Dubois R., Lammel G. (1999): NO_x - A problem for the BERLIOZ modelling? (Comparison of NO_x and NO_y measurements by photolytic gold and molybdenum converters), presented at the *PIPAPO/BERLIOZ Workshop*, Varese/Italy, 13-16.12.1999
- 261) Konrad S., Hofzumahaus A., Holland F., Rohrer F., Schäfer J., Volz-Thomas A., Kurtenbach R., **Rappenglück B.** (1999): Comparison of OH Radical estimates from VOC decay in the Berlin Plume with direct measurements by LIF, presented at the *PIPAPO/BERLIOZ Workshop*, Varese/Italy, 13-16.12.1999
- 262) **Rappenglück B.**, Jakobi G., Fabian P. (1999): Comparison of O₃ and PAN measurements during BERLIOZ, presented at the *PIPAPO/BERLIOZ Workshop*, Varese/Italy, 13-16.12.1999
- 263) **Rappenglück B.**, Euskirchen J., Fabian P. (1999): On-line in-situ measurements in the boundary layer - manned hydrogen balloons as Quasi Langrange platforms, *Atmosphärische Umweltforschung im Wandel*, Berlin, 15.-17.11.1999
- 264) Zerefos C., Kourtidis K., Balis D., Bais A., Blumthaler M., **Rappenglück B.**, Fabian P., Schmitt R., Gobbi G.P., Rapsomanikis S., Gillotay D., Isaksen I., Melas D., Fiocco G., Di Sarra A. Pommereau J.-P., Mihalopoulos N., Herman J., Labow G., Thompson A., Cornwall C., De Luisi J., Tzortziou M. (1999): Overview of the first results from the PAUR II experiment, presented at the 5th European workshop on stratospheric ozone, Saint-Jean-de-Luz/France, 27.09. - 01.10.1999
- 265) **Rappenglück B.**, Euskirchen J., Fabian P. (1999): On-line in-situ measurements in the boundary layer - manned hydrogen balloons as Quasi Langrange platforms, presented at the *4th International Airborne Remote Sensing Conference and Exhibition*, Ottawa/Canada, 21 - 24.06.1999

- 266) Konrad S., Fabian P., Gomez A., Großmann D., Houben N., Kurtenbach R., Lörzer J., Mihelcic D., Moortgat G., Müsgen P., Pätz H.W., **Rappenglück B.**, Schmitz T., Volz-Thomas A. (1999): Decay of nitrogen oxides and volatile organic compounds in the plume of Berlin, presented at the *European Geophysical Society (EGS) XXIV General Assembly*, Den Haag/Netherlands, 19.-23.04.1999
- 267) **Rappenglück B.**, Oyola P., Olaeta I., Jakobi G., Fabian P. (1999): The urban plumes of Santiago de Chile and Berlin, presented at the *European Geophysical Society (EGS) XXIV General Assembly*, Den Haag/Netherlands, 19.-23.04.1999
- 268) Zerefos, C.S., Fabian P., Isaksen I., Krueger B., Pommereau J.-P., Hofzumahaus A., Bais A.F., Balis D.S., Berntsen T., Blumthaler M., Goutail F., Kosmidis E., Kourtidis K., Kraus A., Kylling A., Marengo F., Meleti C., Nunes-Pinharanda M., Papayannis A., **Rappenglück B.**, Santasecchia V., Schmitt R., Suppan P., Tourpali K., Ziomias I.C. (1998): Overview of results from the PAUR campaign, *The European Conference on Atmospheric UV Radiation*, Helsinki/Finland, 29.06. – 02.07.1998
- 269) Kourtidis K., Zerefos C., Tsiouri I., Schmitt R., **Rappenglück B.**, Suppan P., Fabian P. (1998): Production and destruction rate of OH at an island and a suburban site in Greece during the 1996 PAUR campaign, *European Geophysical Society (EGS) XXIII General Assembly*, Nizza/Frankreich, 20.-24.04.1998
- 270) **Rappenglück B.**, Jakobi G., Fabian P. (1998): Photochemical processes in the urban plume of Berlin in relationship to different VOC/NO_x ratios: In-situ measurements aboard a free manned gas balloon and at selected ground-based sites (in German), presented at the *TFS-Workshop*, Mainz/Germany, 02.-04.12.1998
- 271) **Rappenglück B.**, Oyola P., Olaeta I., Fabian P. (1998): Photochemical processes in the Metropolitan Area of Santiago de Chile, presented at the *VIII National Meteorological Congress of the Mexican Meteorological Society*, Veracruz/Mexico, 28.-30.10.1998
- 272) **Rappenglück B.**, Oyola P., Olaeta I., Fabian P. (1998): Photochemical smog in Santiago de Chile - Relationships between the precursors NO_x, CO, NMHC and the secondary compounds ozone and PAN (in German), presented at the *Conference of the German Meteorological Society*, Leipzig/Germany, 14.-18.09.1998
- 273) **Rappenglück B.**, Fabian P. (1998): Photochemical processes in the Greater Munich Area (in German), presented at the *Conference of the German Meteorological Society*, Leipzig/Germany, 14.-18.09.1998
- 274) Zerefos, C.S., Fabian P., Isaksen I., Krueger B., Pommereau J.-P., Hofzumahaus A., Bais A.F., Balis D.S., Berntsen T., Blumthaler M., Goutail F., Kosmidis E., Kourtidis K., Kraus A., Kylling A., Marengo F., Meleti C., Nunes-Pinharanda M., Papayannis A., **Rappenglück B.**, Santasecchia V., Schmitt R., Suppan P., Tourpali K., Ziomias I.C. (1998): Overview of results from the PAUR campaign, presented at the *European Conference on Atmospheric UV Radiation*, Helsinki/Finland, 29.06. – 02.07.1998
- 275) Kourtidis K., Zerefos C., Tsiouri I., Schmitt R., **Rappenglück B.**, Suppan P., Fabian P. (1998): Production and destruction rate of OH at an island and a suburban site in Greece during the 1996 PAUR campaign, presented at the *European Geophysical Society (EGS) XXIII General Assembly*, Nice, 20.-24.04.1998
- 276) **Rappenglück B.**, Oyola P., Olaeta I., Fabian P. (1998): Photochemical smog in Santiago de Chile - Relationships between NO_x, CO, NMHC and secondary compounds ozone and PAN, presented at the *European Geophysical Society (EGS) XXIII General Assembly*, Nice/France, 20.-24.04.1998
- 277) **Rappenglück B.**, Fabian P. (1998): Observations of biogenic and anthropogenic NMHC in Athens during the PAUR campaign, presented at the *European Geophysical Society (EGS) XXIII General Assembly*, Nice/France, 20.-24.04.1998
- 278) **Rappenglück B.**, Fabian P., Oyola P. (1998): On-Line GC-Measurements of Non Methane Hydrocarbons (NMHC) in Santiago de Chile, presented at the *COLACRO VII (7th Latin-American Congress on Chromatography and Related Techniques*, Águas de São Pedro/Brazil, 25.-27.03.1998
- 279) **Rappenglück B.**, Oyola P., Olaeta I., Schmitt R., Fabian P. (1998): The evolution of photochemical smog in the Metropolitan Area of Santiago de Chile, presented at the *10th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Manag. Assoc.*, Phoenix AZ/USA, 11.-16.01.1998
- 280) Kourtidis K., Zerefos C., Balis D., Schmitt R., **Rappenglück B.**, Suppan P., Fabian P. (1997): Production rate of OH at an island and a suburban site in Greece during the 1996 PAUR campaign, presented at the *European Geophysical Society (EGS) XXII General Assembly*, Vienna/Austria, 21.-25.04.1997
- 281) **Rappenglück B.**, Fabian P., Kalabokas P., Vyras L., Ziomias I. (1996): Volatile Organic Compounds (VOC) and their contribution to the enhancement of photooxidants in the Greater Athens Area under Mediterranean climate conditions, presented at the *9th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association*, Atlanta GA/USA, 28.01.-02.02.1996
- 282) Ziomias I., **Rappenglück B.**, Kourtidis K., Balis D., Tzoumaka P. (1996): An improved emission inventory for Athens tested with the Urban Airshed Model, *Symp. on phys.-chemical behaviour of atmospheric pollutants*, Ispra/Var./Italien, 02.-04.10.1996
- 283) Fabian P., Suppan P., **Rappenglück B.**, Ziomias I., Klemm O. (1996): The effect of the transportation sector on photochemical smog in Athens, *International Mobile Sources/ Clean Air Conference*, München, 19.03.1996
- 284) Fabian P., Suppan P., **Rappenglück B.**, Ziomias I., Klemm O. (1995): Photochemical smog in the Athens Metropolitan Area, *International Workshop on Pollution*, Santiago, Chile, 07.11.1995
- 285) **Rappenglück B.**, Jakobi G., Fabian P., Kalabokas P., Vyras L., Ziomias I. (1995): VOC-Measurements in the urban areas of Munich and Athens, presented at the *European Geophysical Society (EGS)- Conference*, Hamburg/Germany, 07.04.1995
- 286) **Rappenglück B.** (1993): New results of aromatic hydrocarbon measurements ("BTEX") in a forest area (in German), presented at the *Second Meeting of the Biometeorological Committee of the German Meteorological Society (BIOMET)*, Freising-Weißenstephan/Germany, 20.-22.10.1993
- 287) **Rappenglück B.** (1993): Quasi-continuous measurements of hydrocarbons (in German), presented at *METTOOLS II - Second International Conference on Environmental Meteorology of the German Meteorological Society*, Stuttgart-Hohenheim/Germany, 13.-17.09.1993
- 288) Suppan P., **Rappenglück B.**, Fabian P. (1992): Photooxidants in the urban area of Munich, *Int. Symp. on "Planning applications of urban and building climatology"*, Berlin, 14.-15.10.1991

- 289) **Rappenglück B.**, Kourtidis K., Fabian P. (1991): Measurements of ozone and peroxyacetyl nitrate (PAN) in Munich, presented at the *EUROTRAC Workshop & European Geophysical Society (EGS) Conference*, Wiesbaden, Germany 26.04.1991
- 290) Kourtidis, K. A., **Rappenglück B.**, Fabian P., Borchers R. (1990): Measurements of peroxyacetyl nitrate (PAN) and other photooxidants in the urban area of Munich: preliminary results. *10th Intern. Clean Air Conference*, The Clean Air Society of Australia and New Zealand, Auckland/New Zealand

Conference Convenor

- AMS Annual Meeting 2022: Session “Urban Air Pollution under a Changing Climate and Changing Emission Profiles” (together with Eric Velasco)
- 15th ASAAQ (Int. Conf. on Atmospheric Science and Applications to Air Quality) 2019, Kuala Lumpur/Malaysia, Session "Monitoring, detection and spatial environment"
- 14th ASAAQ (Int. Conf. on Atmospheric Science and Applications to Air Quality) 2017, Strasbourg/France: Session "Observations"
- AMS Annual Meeting 2014: Session “Biomass Burning Impacts on Air Quality” (together with Timothy Vanreken)
- 12th ASAAQ (Int. Conf. on Atmospheric Science and Applications to Air Quality) 2013, Seoul/South Korea: Session "Atmospheric Chemistry & Physics"
- AMS Annual Meeting 2012: Session “Atmospheric Field Campaigns III” (together with Nicole Mölders)
- AMS Annual Meeting 2011: Session “Field and modeling studies from Recent Field Campaigns: SHARP 2009 and CalNex 2010” (together with Sylvain Ménard)
- AMS Annual Meeting 2010: Session “The Study of Houston Atmospheric Radical Precursors (SHARP) – II” (together with Jochen Stutz)
- AMS Annual Meeting 2010: Session “The Study of Houston Atmospheric Radical Precursors (SHARP) - III” (together with Renyi Zhang)
- AMS Annual Meeting 2009: Session “Air quality and climate change, Part III” (together with Wallace McMillan)
- AGU Fall Meeting 2007: Session “Day and nighttime chemical processing in polluted atmospheres”; Focus: TexAQS-II und MI-LAGRO (together with Scott Herndon)

Editor

- Special Issue in *Atmosphere* (2018-19) titled “Trace Gas Budgets in Urban and Remote Areas”
- Special Issue in *Atmosphere* (2016-17) titled “Tropospheric Ozone and Its Precursors”
- Associate Editor, *Air Quality, Atmosphere & Health (AQAH)* (since 2016)
- Editorial board member for *Atmosphere* (since 2020)
- Editorial board member for *Advances in Environmental and Engineering Research* (since 2021)
- Editorial board member for *AIMS Environmental Science* (since 2015)
- Editorial board member for *Austin Journal of Earth Science* (since 2014)
- Editorial board member for *IJAS Atmospheric Sciences* (2012-2017)
- Editorial board member for *ISRN Atmospheric Sciences* (2012-2014)
- Special Issue in *Atmospheric Environment* (2010) titled “The TexAQS II Radical and Aerosol Measurement Project (TRAMP)” (together with Barry Lefer)

Invited Talks

- 1) Rappenglück B. (2022): Procesos fotoquímicos y sus variaciones en la Ciudad de México, *online Workshop Diagnóstico sobre el Conocimiento Actual de las Bases Científicas para la Gestión de la Calidad del Aire en la Región de la Megalópolis*, Mexico-City, 19.04.2022.
- 2) Rappenglück B. (2019): The Planetary Boundary Layer and Urban Air Quality, *University of Houston/ Center for Thermo-Fluid Mechanics* – Houston/TX, 22.03.2019.
- 3) Li X., Rappenglück B. (2018): Nighttime Ozone Bias and Vertical Diffusion in Air Quality Modeling in Southeast Texas, *Texas Air Quality Meeting, University of Texas – Austin/TX*, 06.04.2018.
- 4) Cuchiara G., Rappenglück B. (2017): Impact of PBL parameterization on predictions of ozone, *Tropospheric Chemistry meeting/colloquium (ACOM/NCAR)* – Boulder/CO, 27.10.2017.
- 5) Li X., Rappenglück B. (2015): Improved Meteorological Modeling for Houston Air Quality Studies, *Texas Air Quality Meeting, University of Texas – Austin/TX*, 10.04.2015.
- 6) Rappenglück B. (2015): Air Pollution and its Impact on the Environment, *Texas Southern University, Houston/TX*, 22.04.2015
- 7) Rappenglück B. (2015): Modeling of 1,3-Butadiene in Urban and Industrial Areas, *Coordinating Research Council, Sacramento/CA*, 19.02.2015
- 8) Rappenglück B. (2015): Radical Precursors and Related Species from Traffic as Observed and Modeled at an Urban Highway Junction, *Mid-Atlantic Regional Air Management Assoc. (MARAMA)-webinar, Towson/MD*, 28.01.2015
- 9) Rappenglück B. (2014): Analysis of 10 Years online C₂-C₁₁ NMHC Measurements close to the Gulf of Mexico, *invited talk*, 5th WMO/GAW expert meeting on global observations of VOCs, *World Meteorological Organization*, Daejeon/South Korea, 20.10.2014
- 10) Rappenglück B. (2014): Air Quality Aspects in the Arabian Gulf Area, *invited talk*, *Biological & Agricultural Engineering Department, Texas A&M, College Station/Texas*, 01.10.2014

- 11) Rappenglück B. (2014): Unos Aspectos de La Calidad del Aire, *invited talk*, *Universidad Nacional de San Antonio Abad del Cusco*, Cusco/Peru, 09.07.2014
- 12) Rappenglück B. (2013): Air Quality Research in Qatar, *invited talk*, *Qatar University Life Science Symposium (QULSS 2013)*, Doha/Qatar, 10.12.2013
- 13) Rappenglück B. (2013): Urban Climate and Air Quality, *invited talk*, *Faculty of Civil, Geo and Environmental Engineering, Munich University of Technology*, Munich/Germany, 17.04.2013
- 14) Rappenglück B. (2013): Strategies for Atmospheric Research in Qatar, *invited talk*, *Qatar Environment and Energy Research Institute (QEERI)*, Doha/Qatar, 12.03.2013
- 15) Rappenglück B. (2012): Long-term online C2-C11 VOC Measurements in a Subtropical Area close to the Gulf of Mexico, *invited talk*, 4th WMO/GAW expert meeting on global observations of VOCs, *World Meteorological Organization*, York/UK, 11.09.2012
- 16) Rappenglück B. (2012): Air Quality in Urban Areas – What are the Important Challenges?, *invited talk*, *Qatar Clean Air Research Workshop*, Doha/Qatar, 23.04.2012
- 17) Rappenglück B. (2012): Air Quality Research in Houston, Texas - Results from Observations and Modeling Studies, *invited talk*, *Qatar Environment and Energy Research Institute (QEERI)*, Doha/Qatar, 15.02.2012
- 18) Rappenglück B. (2010): Urban Climate and Air Pollution - Example Houston, Texas, *invited talk*, *Faculty of Civil Engineering and Geodesy, Munich University of Technology*, Munich/Germany, 20.07.2010
- 19) Rappenglück B. (2010): Analysis of in-situ VOC data in a subtropical area close to the Gulf of Mexico, *invited talk*, 3rd WMO/GAW expert meeting on global observations of VOCs, *World Meteorological Organization*, Helsinki/Finland, 29.06.2010
- 20) Rappenglück B. (2010): Overview of Meteorology and Chemistry Measurements during SHARP, *invited talk*, *Annenberg Presidential Center, Texas A&M University*, College Station/Texas, 23.04.2010
- 21) Rappenglück B. (2009): Formaldehyde (HCHO) and Nitrous Acid (HONO) in the Houston Atmosphere, *invited seminar lecture*, *Department of Civil and Environmental Engineering, University of Houston*, Houston/Texas, 22.09.2009
- 22) Rappenglück B. (2008): El Cambio Climático y América Latina, *invited talk*, *Gobierno Regional Cusco*, Cusco/Perú, 16.10.2008
- 23) Rappenglück B. (2008): The Application of an Urban online VOC Network for GAW Objectives, *invited talk*, *GAW-VOC/CCQM-GAWG Workshop*, *World Meteorological Organization*, Dübendorf/Switzerland, 08.07.2008
- 24) Rappenglück B. (2007): University of Houston Field Campaign Activities in Support of TexAQS-II in 2006, *invited seminar lecture*, *Harvard University*, Cambridge MA/USA, 09.02.2007
- 25) Rappenglück B. (2006): Organic Compounds and their role in Atmospheric Chemistry (in German), *invited seminar lecture*, *Johann Wolfgang Goethe University*, Frankfurt am Main/Germany, 15.12.2006
- 26) Rappenglück B. (2006): Peroxyacetylnitrates (PANs) in the Atmosphere (in Spanish), *invited seminar lecture*, *Centro de Ciencias de la Atmósfera - Universidad Nacional Autónoma de México (UNAM)*, Mexico City/Mexico, 19.05.2006
- 27) Rappenglück B. (2006): The 1st GAW VOC Intercomparison, *invited talk*, *World Meteorological Organization*, Geneva/Switzerland, 30.01.2006
- 28) Rappenglück B. (2005): VOCs and their relation to Ozone, PAN, and Secondary Organic Aerosols in the Urban Plume of Santiago de Chile, *invited seminar lecture*, *Texas A & M University*, College Station TX/USA, 15.04.2005
- 29) Rappenglück B. (2004): Results from air quality studies in Santiago de Chile, *invited seminar lecture*, *Department of Geosciences – University of Houston*, Houston TX/USA, 29.04.2004
- 30) Rappenglück B. (2003): Biogenically emitted oxygenated compounds – do they indicate plant stress? (in German), *invited lecture*, *Science Center Weihenstephan, Technical University of Munich*, Freising-Weihenstephan/ Germany, 29.10.2003
- 31) Rappenglück B. (2002): Interactions Between Vegetation and Atmosphere – a Focus in Ecoclimatology (in German), *invited lecture*, *Department of Ecology, Technical University of Munich*, Freising-Weihenstephan/ Germany, 15.11.2002
- 32) Rappenglück B. (2002): Some Aspects of Urban Air Quality Studies (in Spanish), *invited lecture*, *CONAMA R.M./GTZ*, Santiago de Chile, 06.11.2002
- 33) Rappenglück B. (2000): Ambient Air Contamination (in Spanish), *invited lecture* at the Municipality of Cuzco, 31.10.2000, Cuzco, Perú
- 34) Rappenglück B. (2000): Photochemical Smog (in Spanish), *invited lecture* at the 5th Workshop of the Initiative of Clean Air for Latin American Cities organized by the Government of the Metropolitan Region of Santiago, the World Bank, and CONAMA R.M., 25.10.2000, Santiago de Chile
- 35) Rappenglück B. (1998): NMHC measurements in selected urban areas using on-line gas chromatography - Case studies: Munich/Germany, Athens/Greece and Santiago de Chile, *invited seminar lecture*, *National Oceanic and Atmospheric Administration (NOAA) - Environmental Research Laboratories - Aeronomy Laboratory*, Boulder CO/USA, 16.11.1998
- 36) Rappenglück B. (1994): Aromatic hydrocarbons - What is their contribution to the formation of ozone and PAN? (in German), *invited lecture* in the Course of the Leipzig Meteorological Colloquium, *Institute for Tropospheric Research (IFT)*, Leipzig/Germany, 07.07.1994